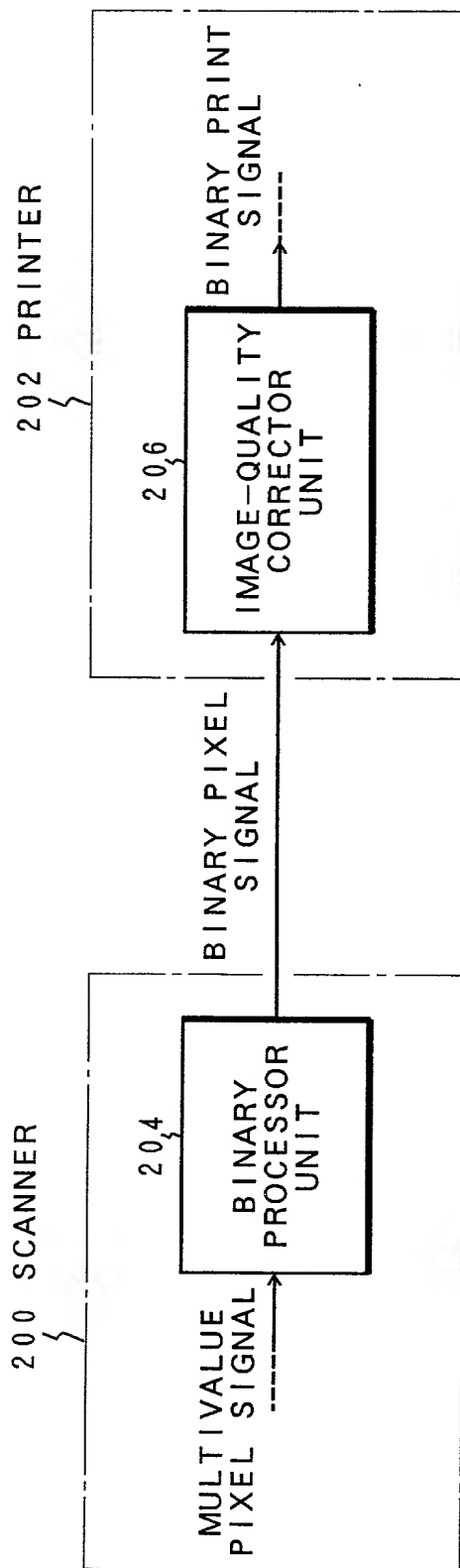
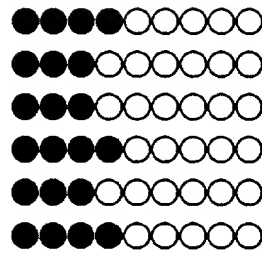


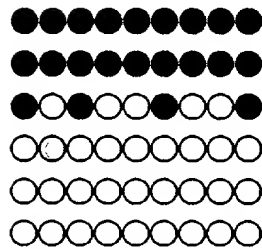
FIG. 1 PRIOR ART



PRIOR ART  
FIG. 2A

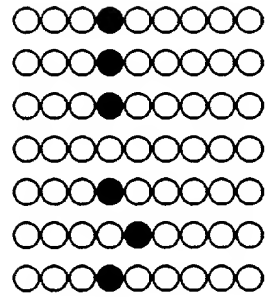


PRIOR ART  
FIG. 2B

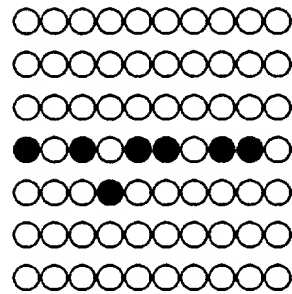


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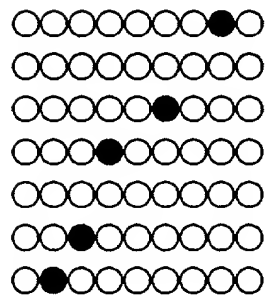
PRIOR ART  
FIG. 3A



PRIOR ART  
FIG. 3B



PRIOR ART  
FIG. 3C



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FIG. 4A PRIOR ART

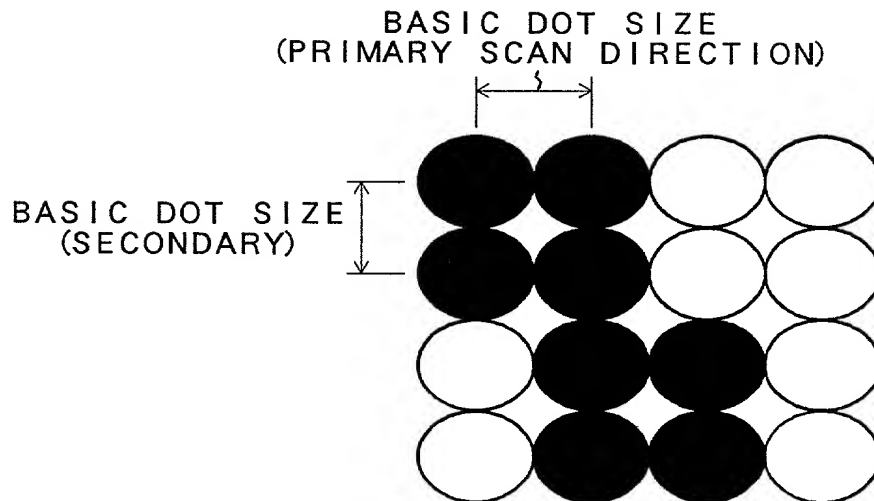
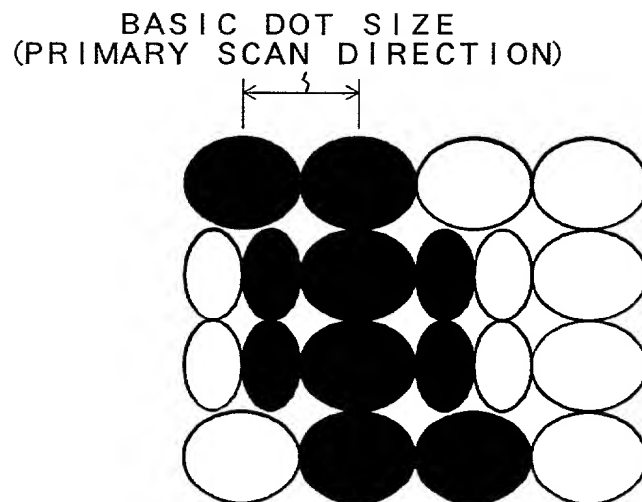
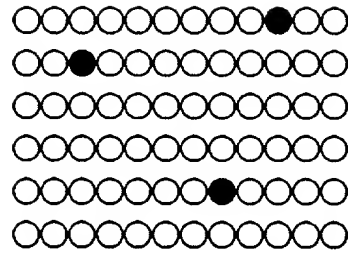


FIG. 4B PRIOR ART

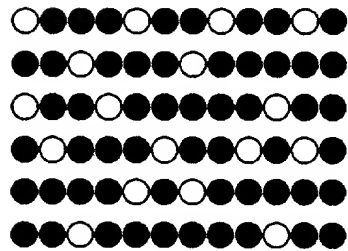


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PRIOR ART  
FIG. 5A

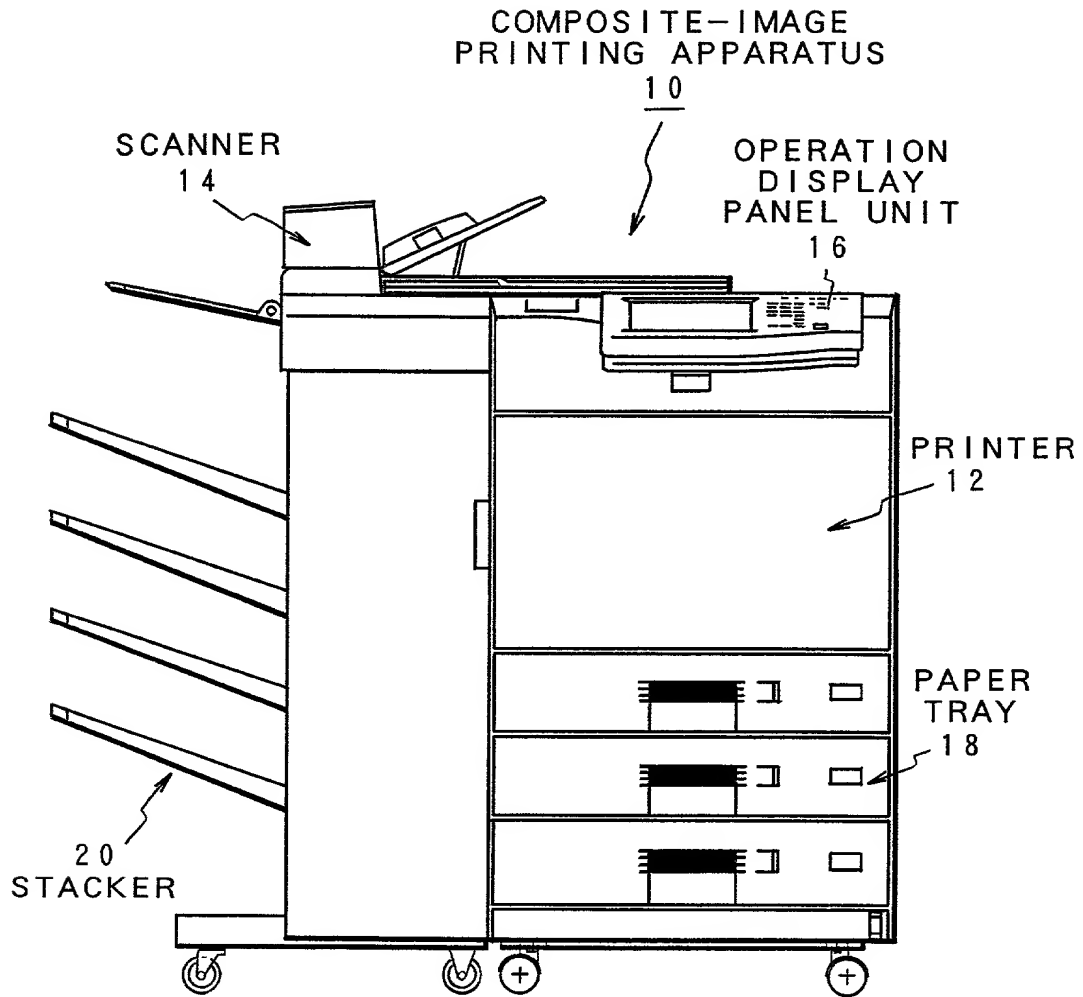


PRIOR ART  
FIG. 5B



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FIG. 6



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FIG. 7

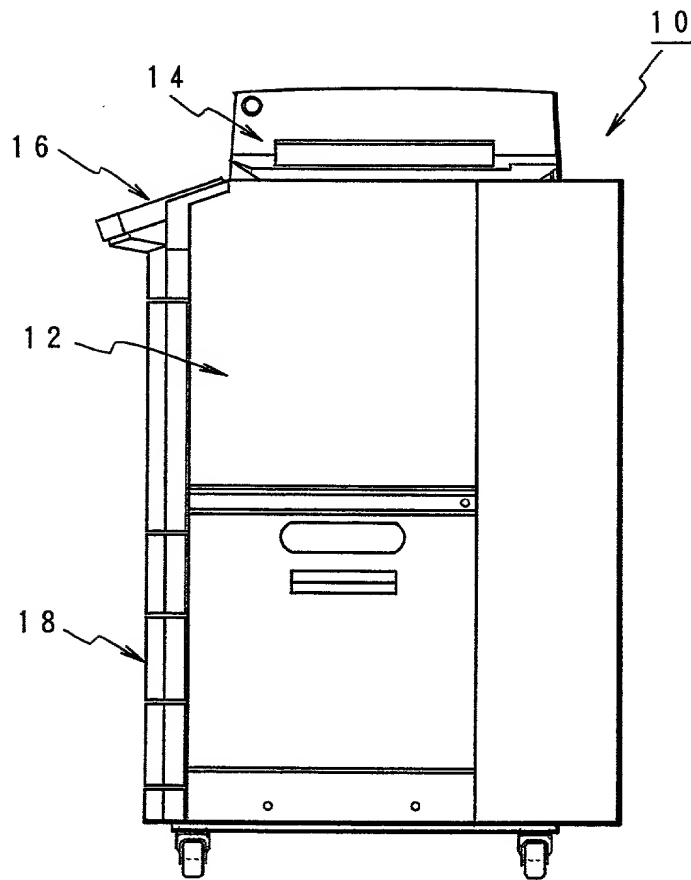
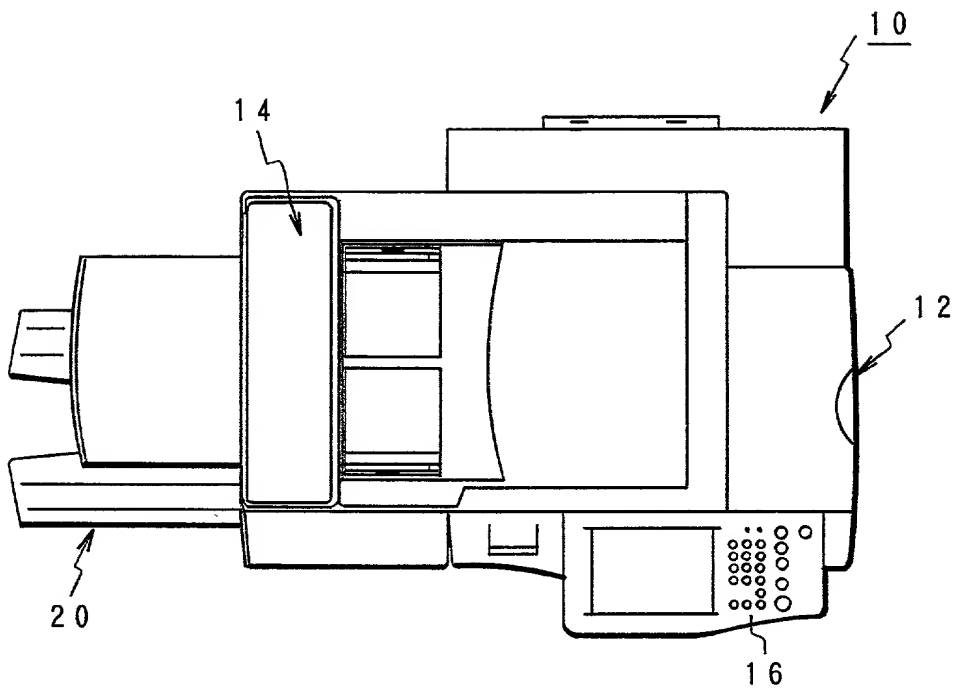


FIG. 7

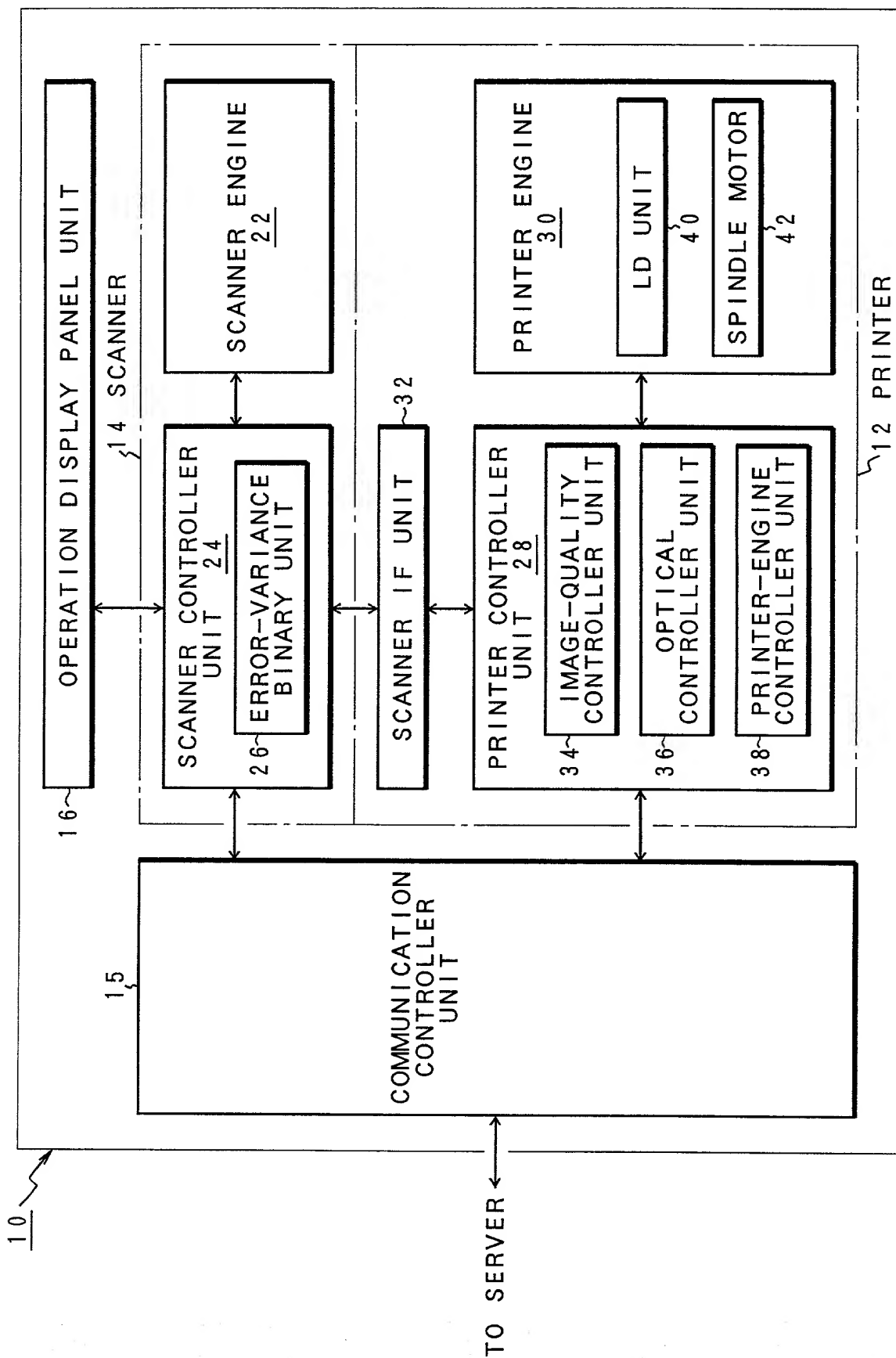
FIG. 8



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FIG. 9



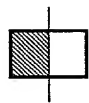
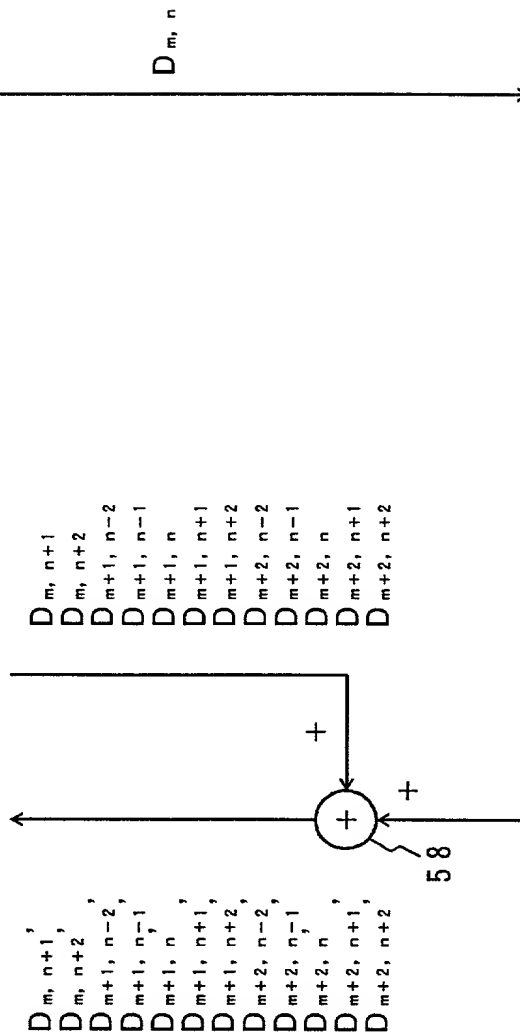


FIG. 10A

50 DATA LINE MEMORY

	$n-2^{\text{TH}}$ DOT	$n-1^{\text{TH}}$ DOT	$n^{\text{TH}}$ DOT	$n+1^{\text{TH}}$ DOT	$n+2^{\text{TH}}$ DOT
$m^{\text{TH}}$ LINE			$D_{m,n}$	$D_{m,n+1}$	$D_{m,n+2}$
$m+1^{\text{TH}}$ LINE	$D_{m+1,n-2}$	$D_{m+1,n-1}$	$D_{m+1,n}$	$D_{m+1,n+1}$	$D_{m+1,n+2}$
$m+2^{\text{TH}}$ LINE	$D_{m+2,n-2}$	$D_{m+2,n-1}$	$D_{m+2,n}$	$D_{m+2,n+1}$	$D_{m+2,n+2}$



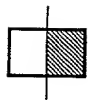


FIG. 10B

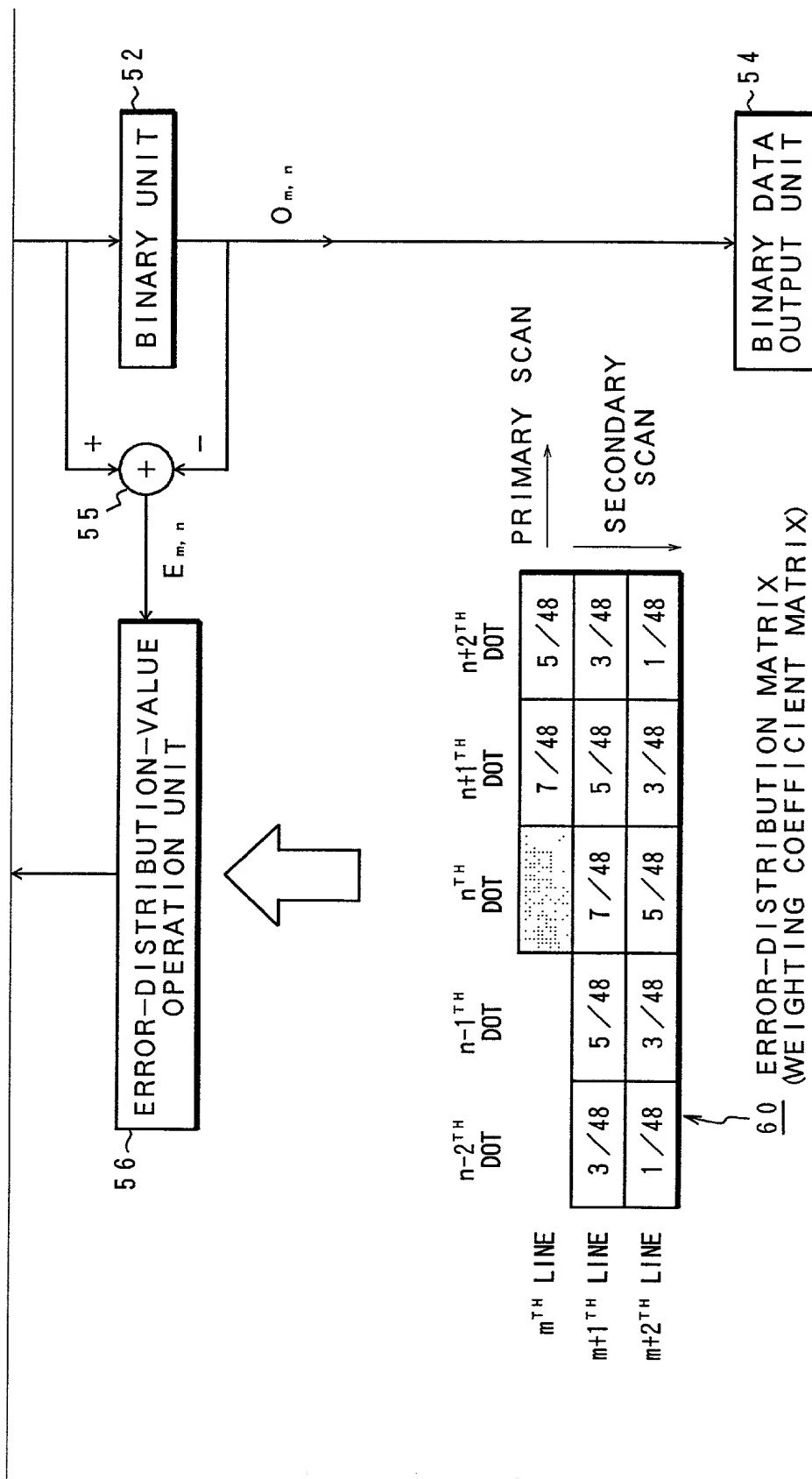


FIG. 11A



FIG. 11B

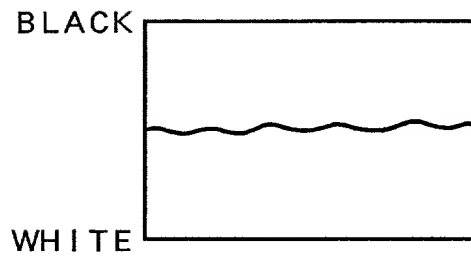


FIG. 11C

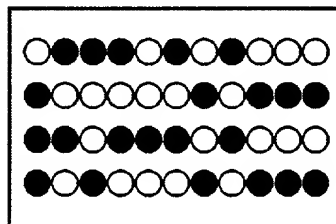


FIG. 11A

FIG. 12A

ORIGINAL PICTURE  
IMAGE

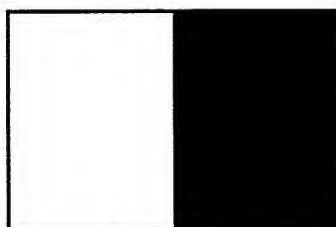


FIG. 12B

MULTIVALUE DENSITY  
LEVEL

BLACK

WHITE

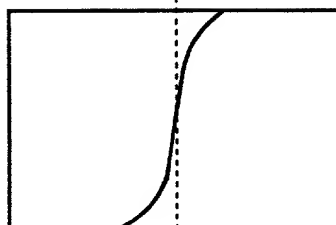
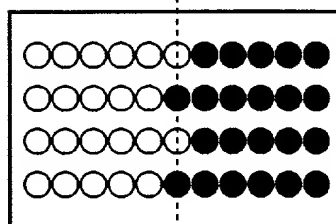


FIG. 12C

OUTPUT IMAGE



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FIG. 13A

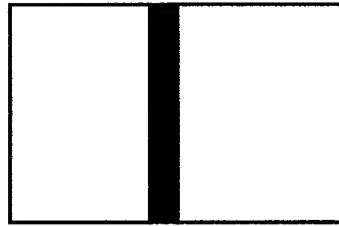


FIG. 13B

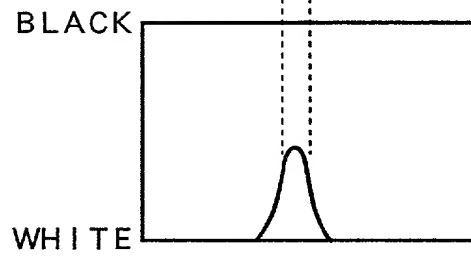
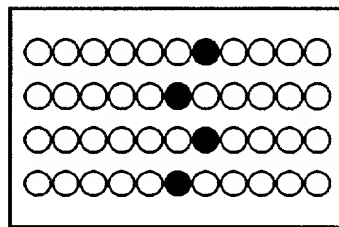


FIG. 13C



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FIG. 14

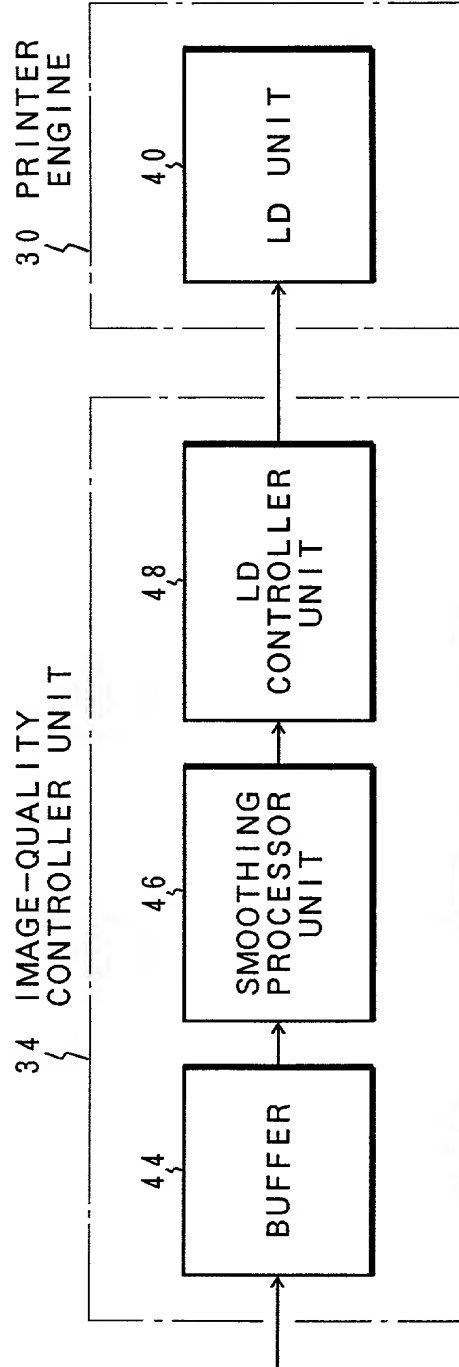


FIG. 15

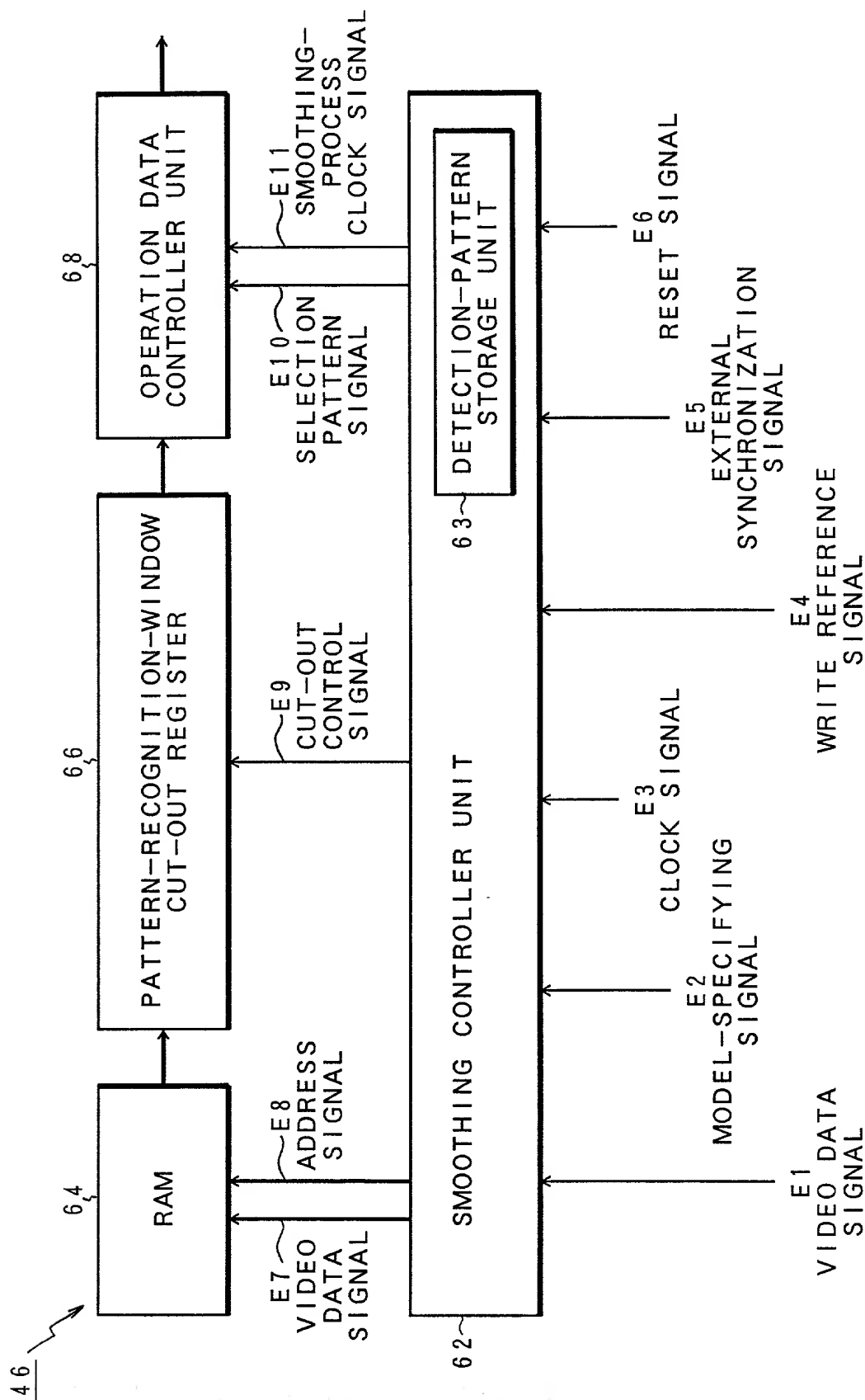
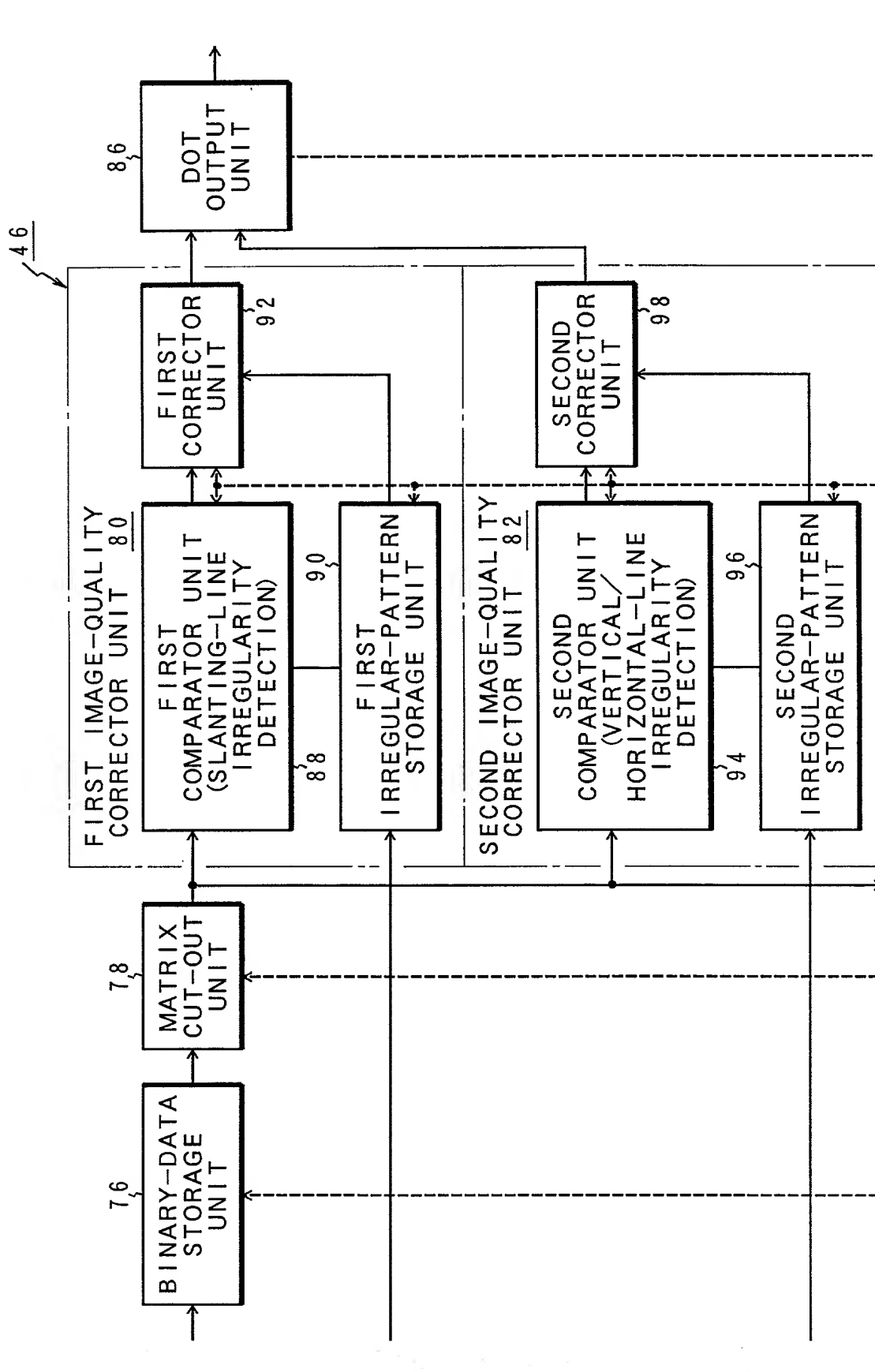






FIG. 17A



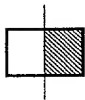


FIG. 17B

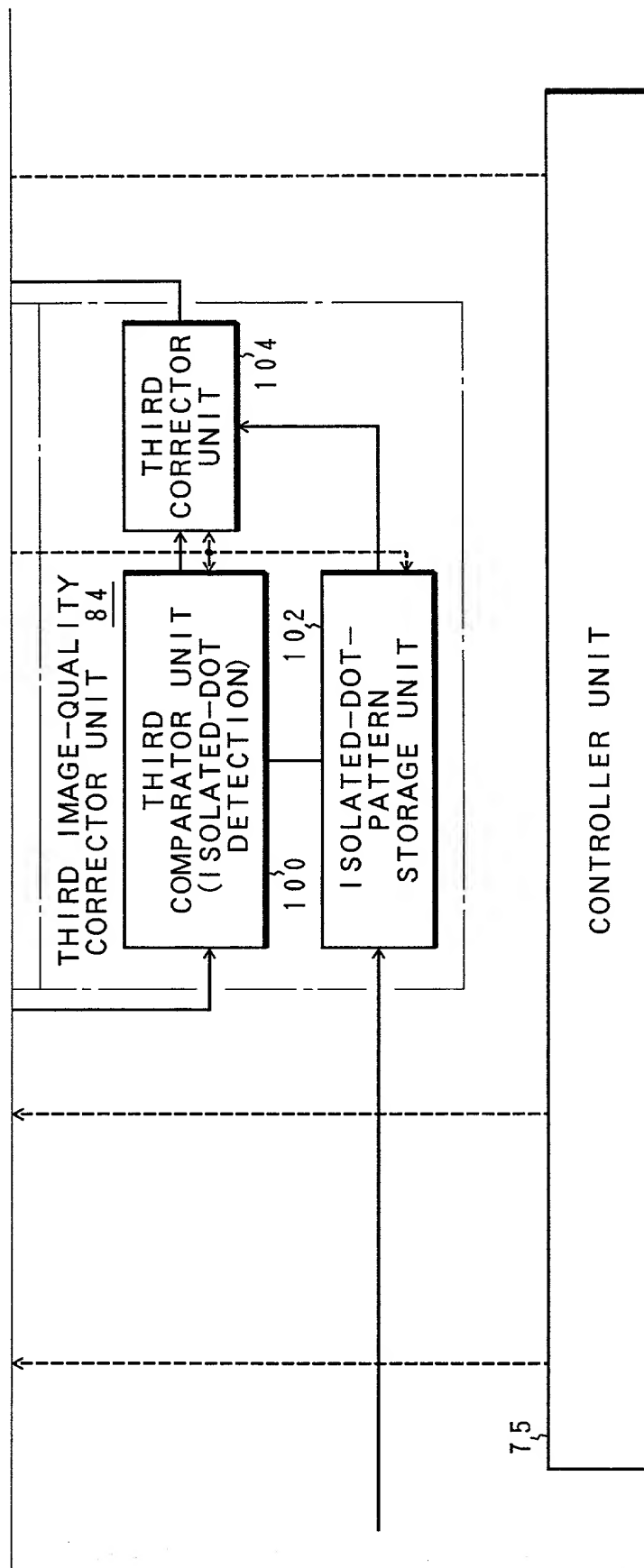
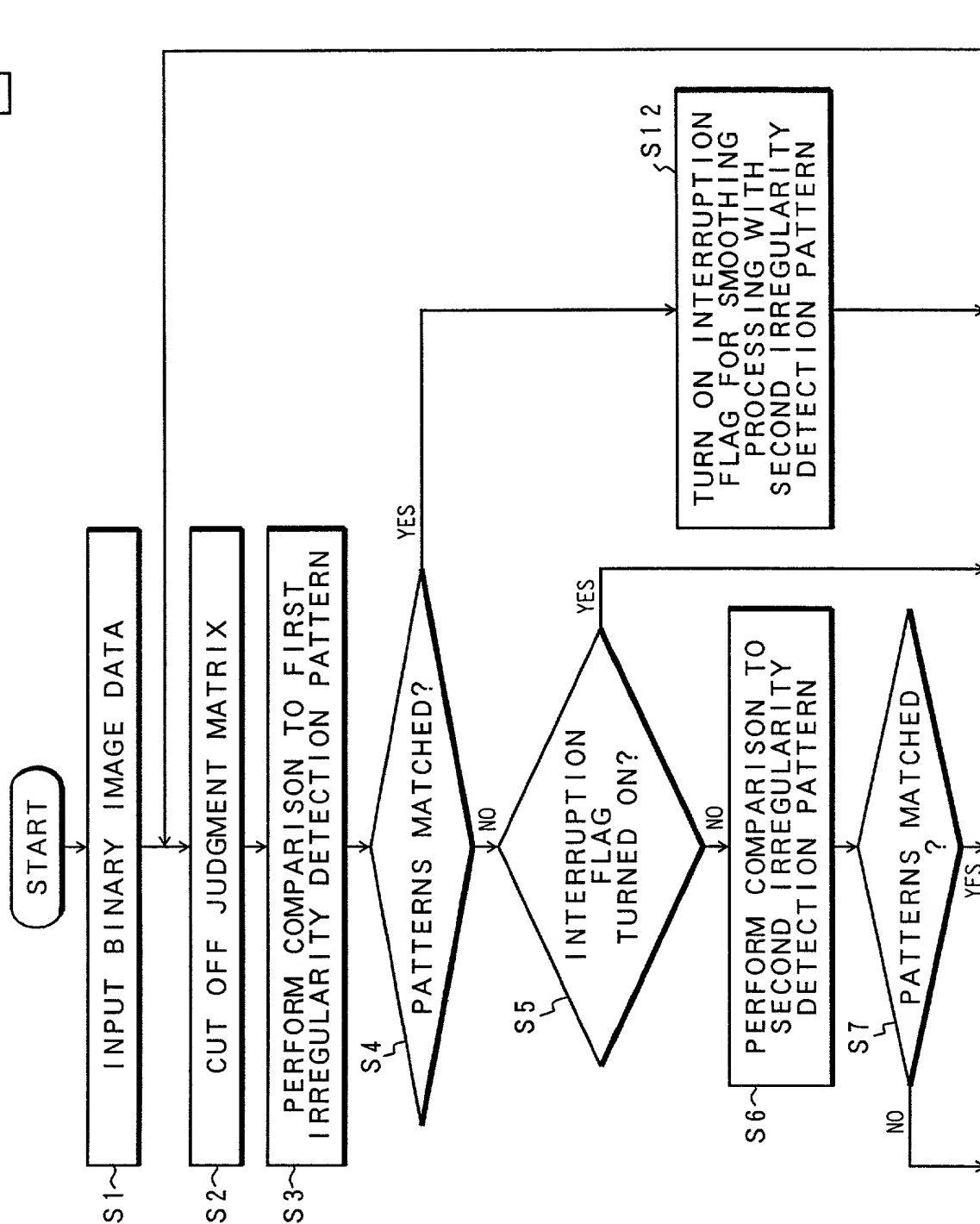


FIG. 18A



**FIG. 18B**

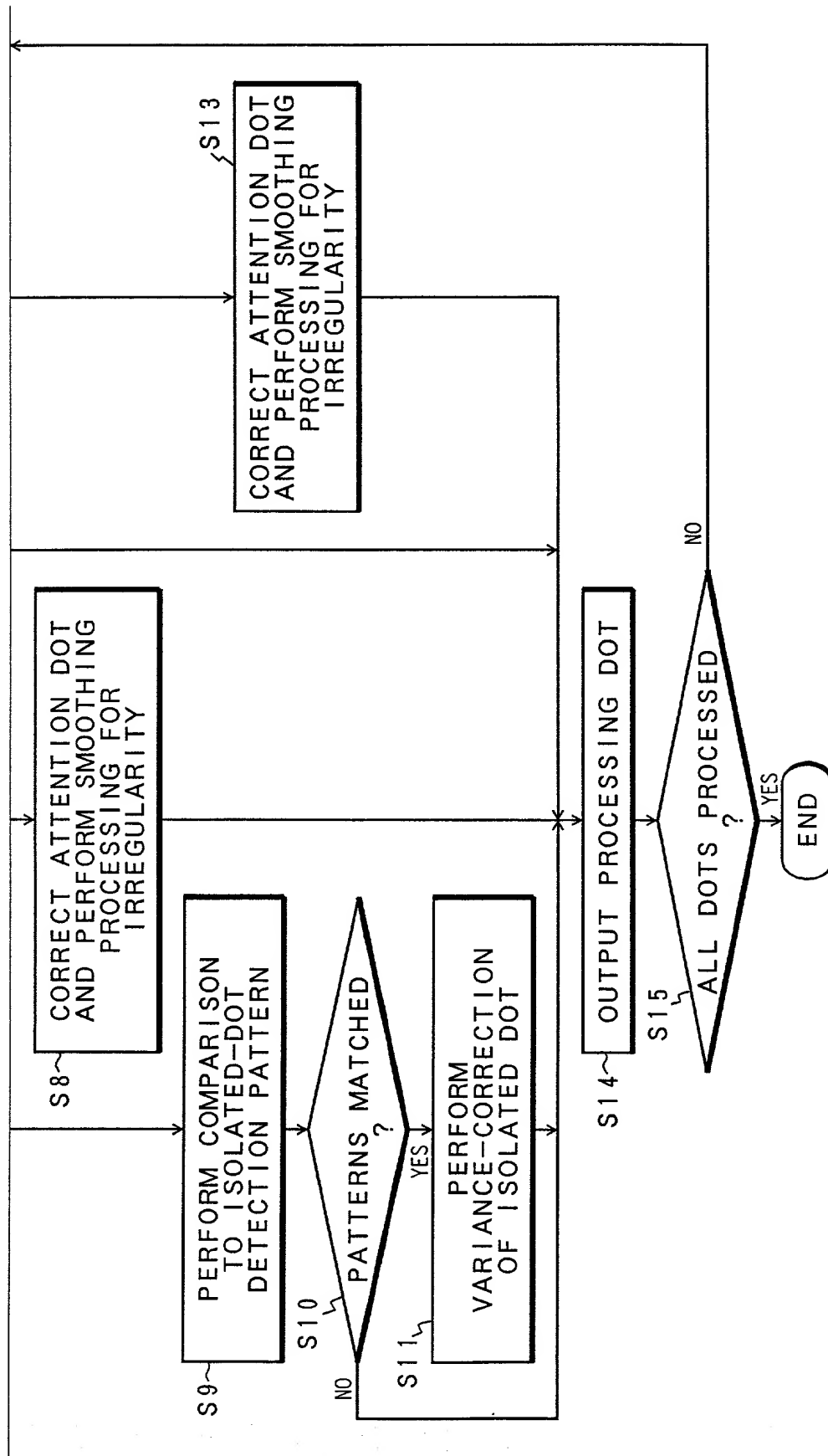
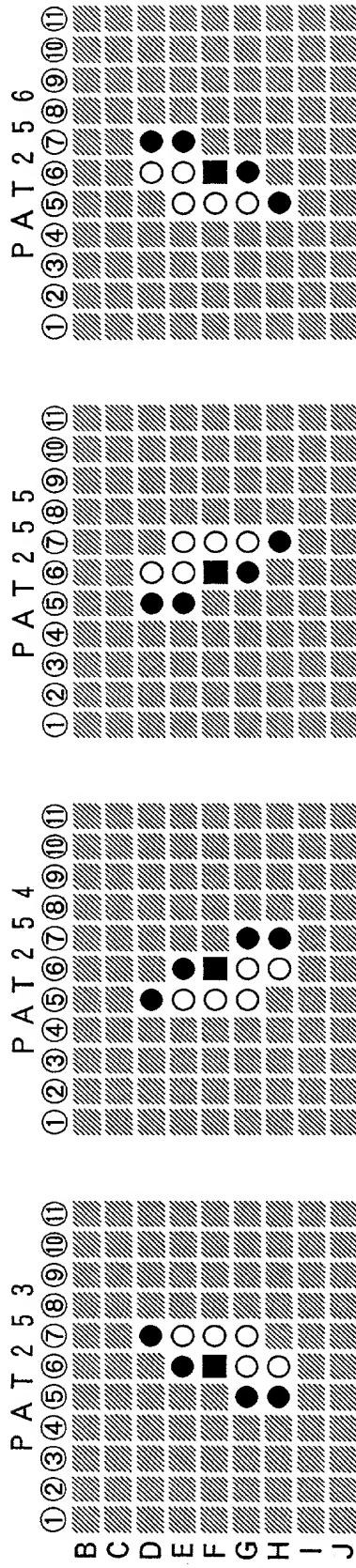


FIG. 19

STORAGE UNITS	PATTERN CONTENTS	BINARY METHODS
FIRST IRREGULAR-PATTERN STORAGE UNIT	SLANTING-LINE IRREGULARITY DETECTION PATTERN	SIMPLE BINARY/DITHER
SECOND IRREGULAR-PATTERN STORAGE UNIT	VERTICAL/HORIZONTAL-LINE IRREGULARITY DETECTION PATTERN	ERROR VARIANCE
	THIN-LINE PATCHY DETECTION PATTERN	ERROR VARIANCE
ISOLATED-DOT-PATTERN STORAGE UNIT	ISOLATED-DOT DETECTION PATTERN	ERROR VARIANCE

FIG. 20

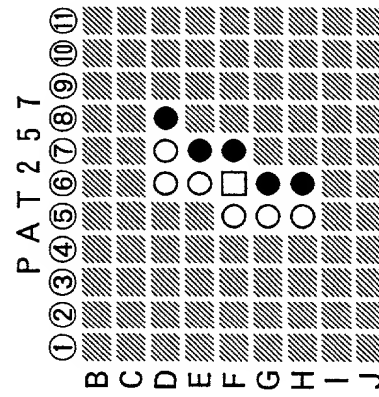


① 00 1110 00  
② 00 1100 00  
③ 00 1111 00

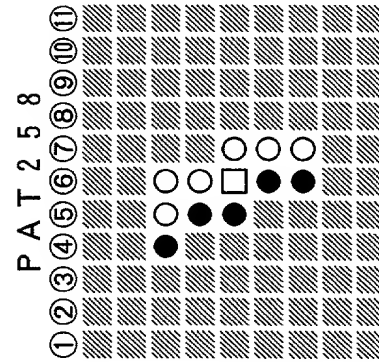
00 0111 00  
00 0011 00  
00 1111 00

00 1110 00  
00 1100 00  
00 1111 00

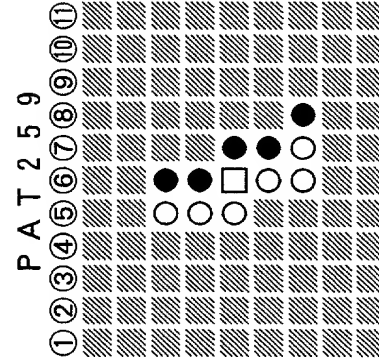
00 0111 00  
00 0011 00  
00 1111 00



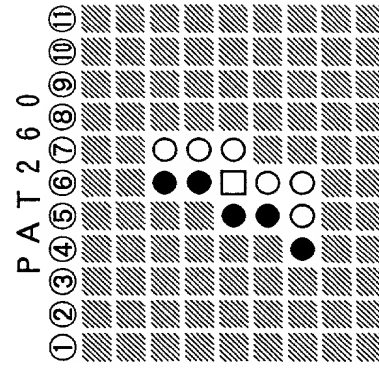
① 00 0000 00  
② 00 0001 00  
③ 00 0011 00



00 0000 00  
00 1000 00  
00 1100 00



00 0000 00  
00 0001 00  
00 0011 00

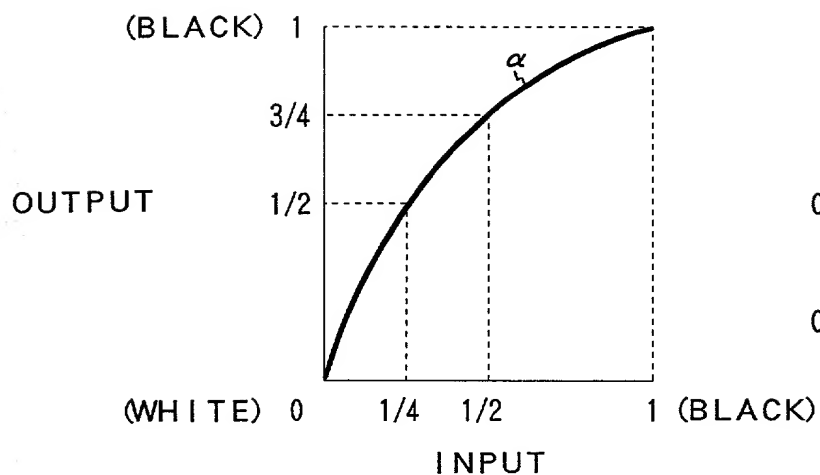


00 0000 00  
00 1000 00  
00 1100 00



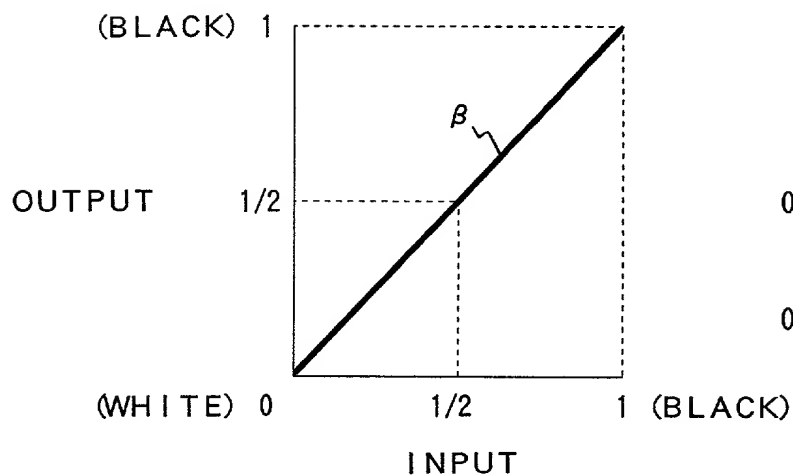


FIG. 22A



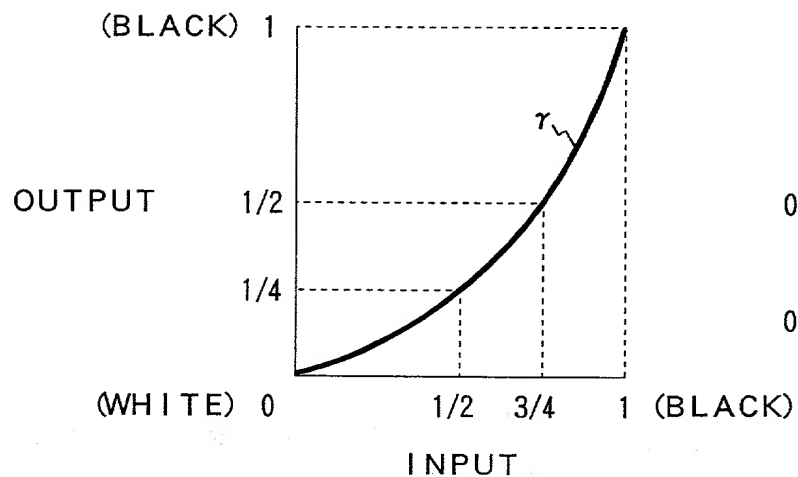
105-1  
 00 0111 00  
 105-2  
 00 1110 00

FIG. 22B



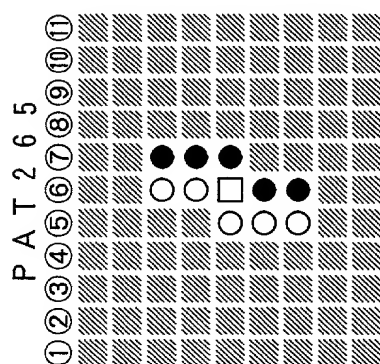
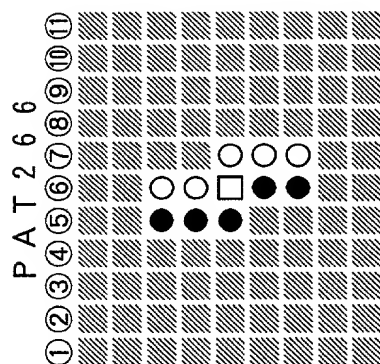
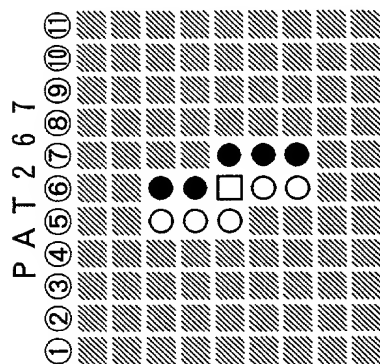
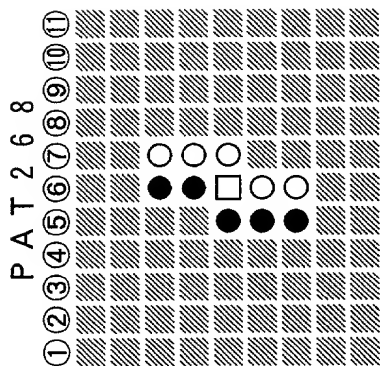
106-1  
 00 0011 00  
 106-2  
 00 1100 00

FIG. 22C



108-1  
 00 0001 00  
 108-2  
 00 1000 00

FIG. 23

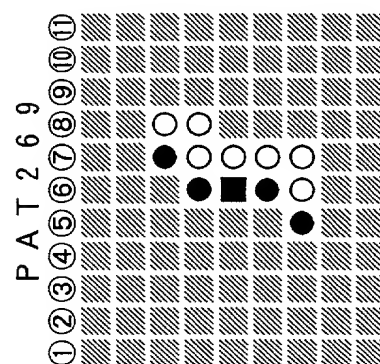
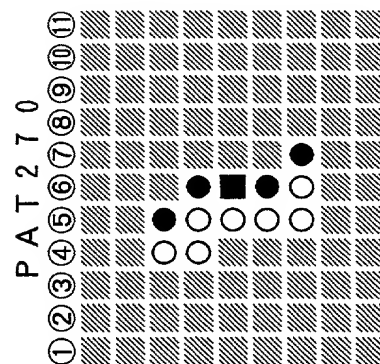
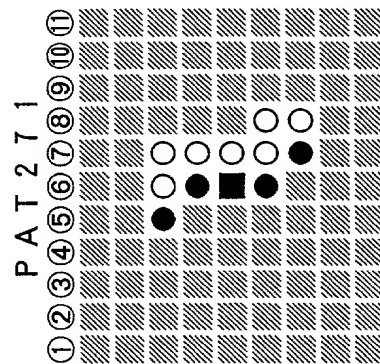
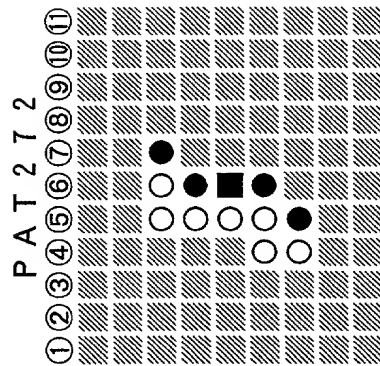


① 00 1000 00  
② 00 1100 00  
③ 00 1110 00

① 00 0001 00  
② 00 0011 00  
③ 00 0111 00

① 00 1000 00  
② 00 1100 00  
③ 00 1110 00

① 00 0001 00  
② 00 0011 00  
③ 00 0111 00



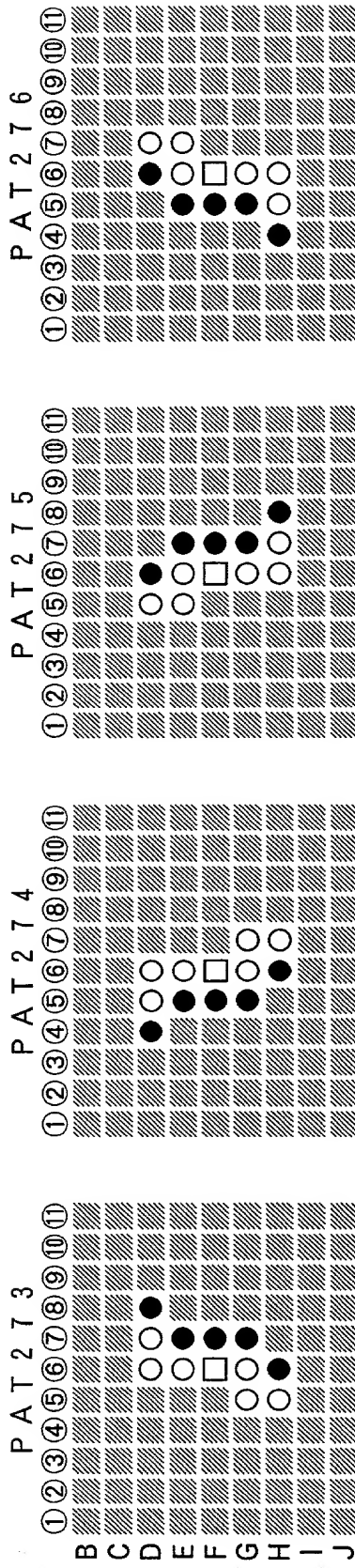
① 00 1111 00  
② 00 0111 00  
③ 00 0110 00

① 00 1111 00  
② 00 1110 00  
③ 00 0110 00

① 00 1111 00  
② 00 0111 00  
③ 00 0110 00

① 00 1111 00  
② 00 1110 00  
③ 00 0110 00

FIG. 24

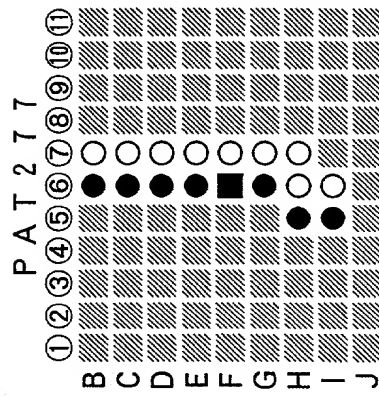


① 00 0000 00  
② 00 0001 00  
③ 00 0011 00

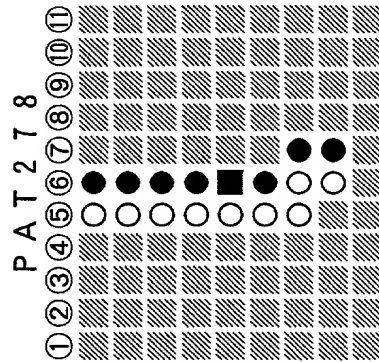
00 0000 00  
00 1000 00  
00 1100 00

00 0000 00  
00 0001 00  
00 0011 00

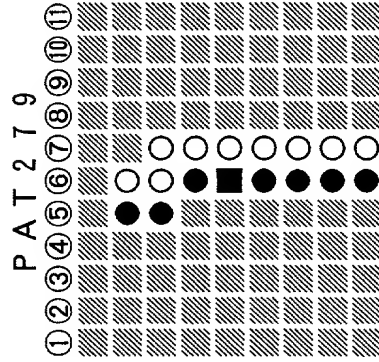
00 0000 00  
00 1000 00  
00 1100 00



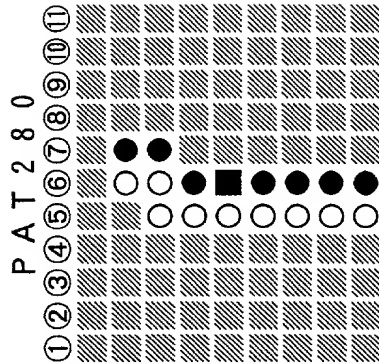
① 00 1100 00  
② 00 1110 00  
③ 00 1111 00



00 0011 00  
00 0111 00  
00 1111 00

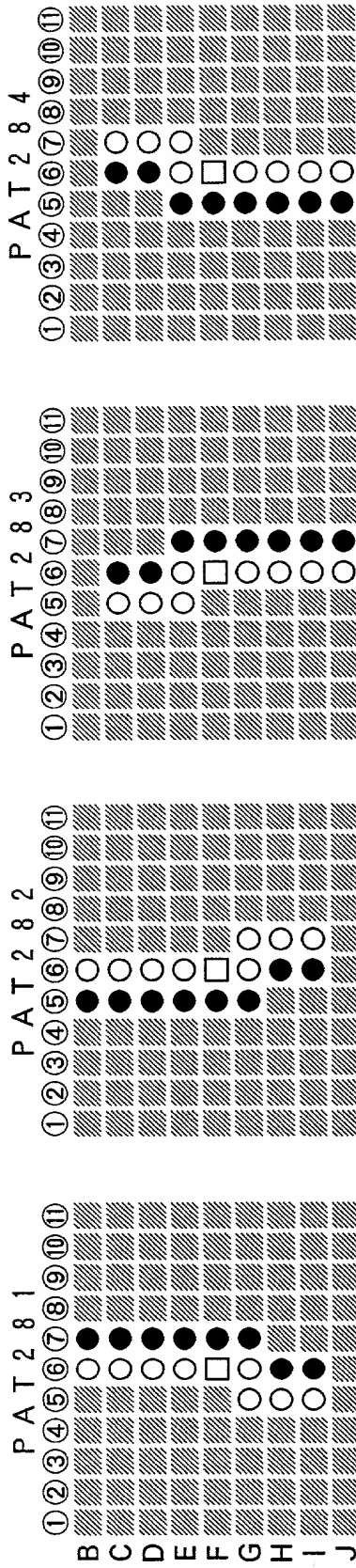


00 1100 00  
00 1110 00  
00 1111 00



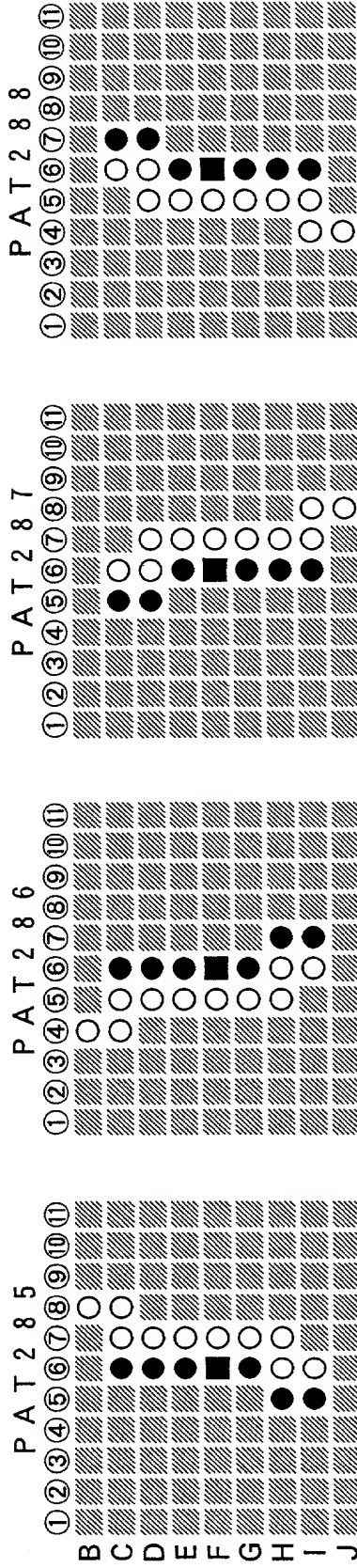
00 0011 00  
00 0111 00  
00 1111 00

# FIG. 25



① 00 0001 00  
② 00 0011 00  
③ 00 0111 00

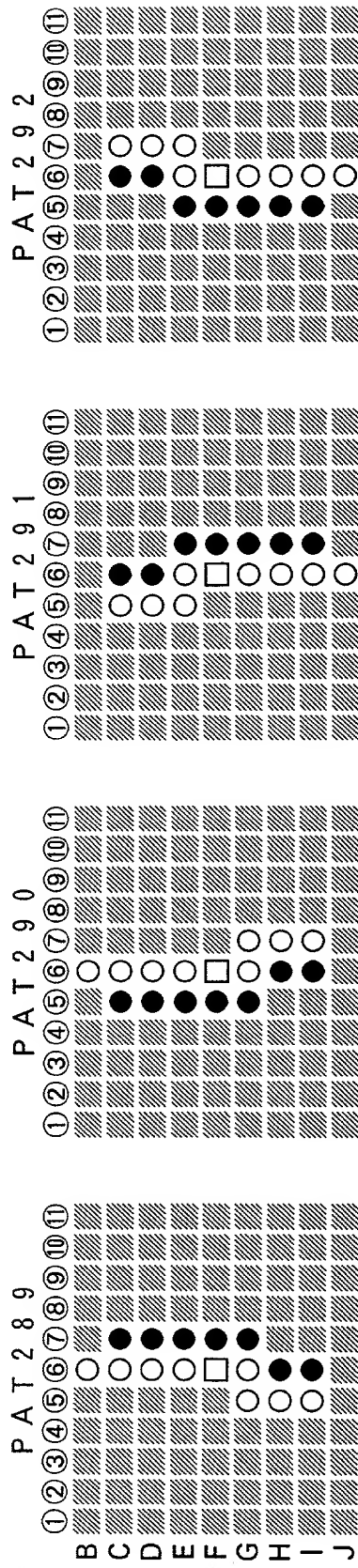
00 1000 00  
00 1100 00  
00 1110 00



① 00 1100 00  
② 00 1110 00  
③ 00 1111 00

00 0011 00  
00 0111 00  
00 1111 00

FIG. 26

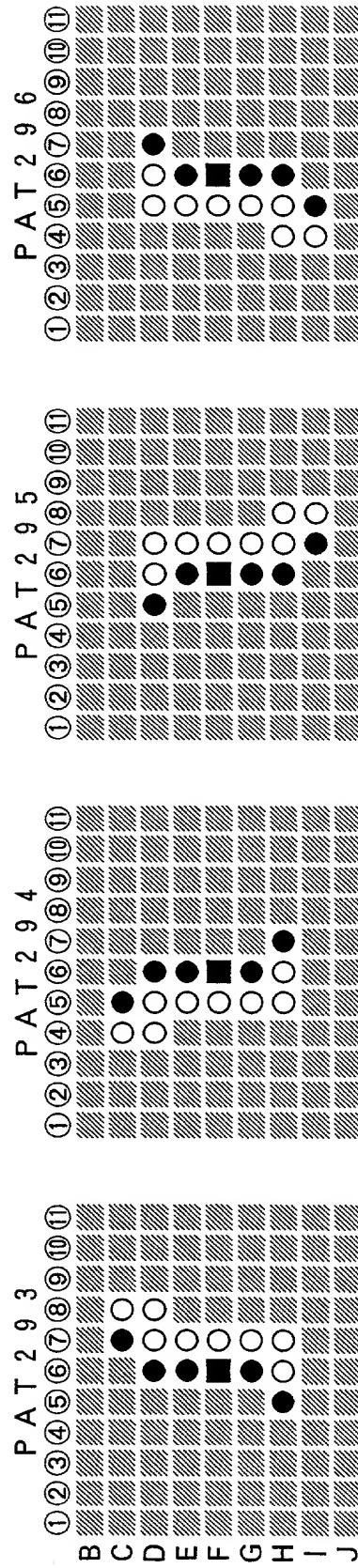


① 00 0001 00  
② 00 0011 00  
③ 00 0111 00

00 1000 00  
00 1100 00  
00 1110 00

00 0001 00  
00 0011 00  
00 0111 00

00 1000 00  
00 1100 00  
00 1110 00



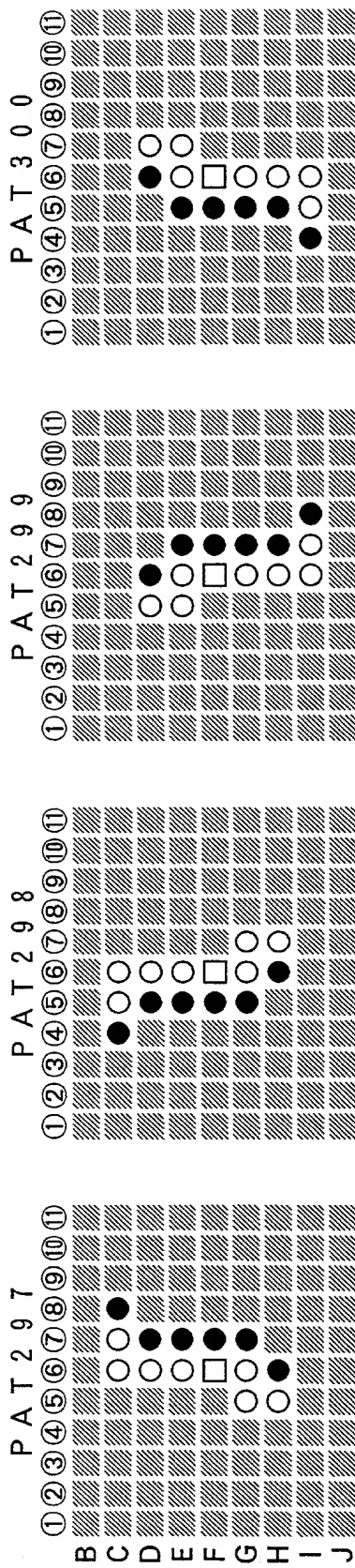
① 00 1100 00  
② 00 1110 00  
③ 00 1111 00

00 0011 00  
00 0111 00  
00 1111 00

00 1100 00  
00 1110 00  
00 1111 00

00 0011 00  
00 0111 00  
00 1111 00

FIG. 27

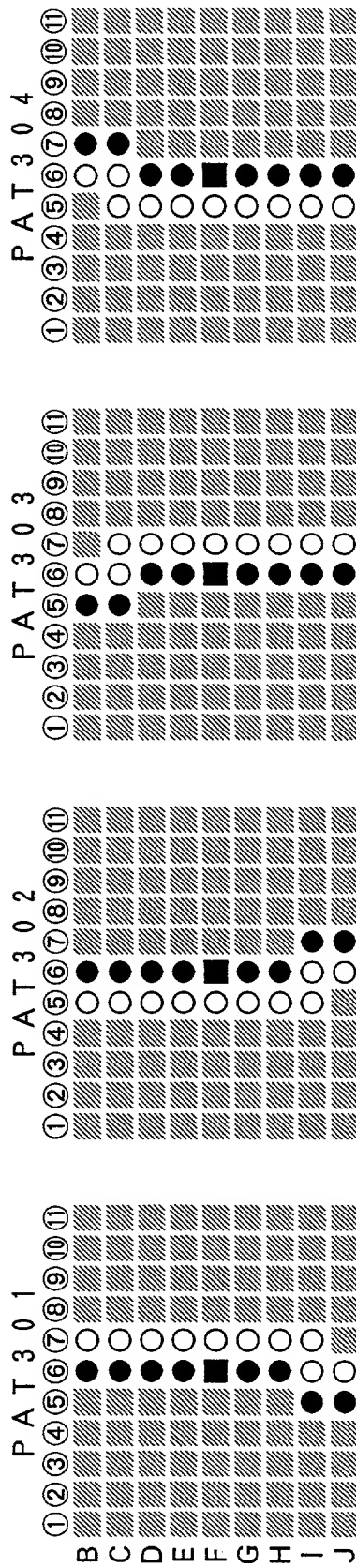


① 00 0001 00  
② 00 0011 00  
③ 00 0111 00

00 1000 00  
00 1100 00  
00 1110 00

00 0001 00  
00 0011 00  
00 0111 00

00 1000 00  
00 1100 00  
00 1110 00



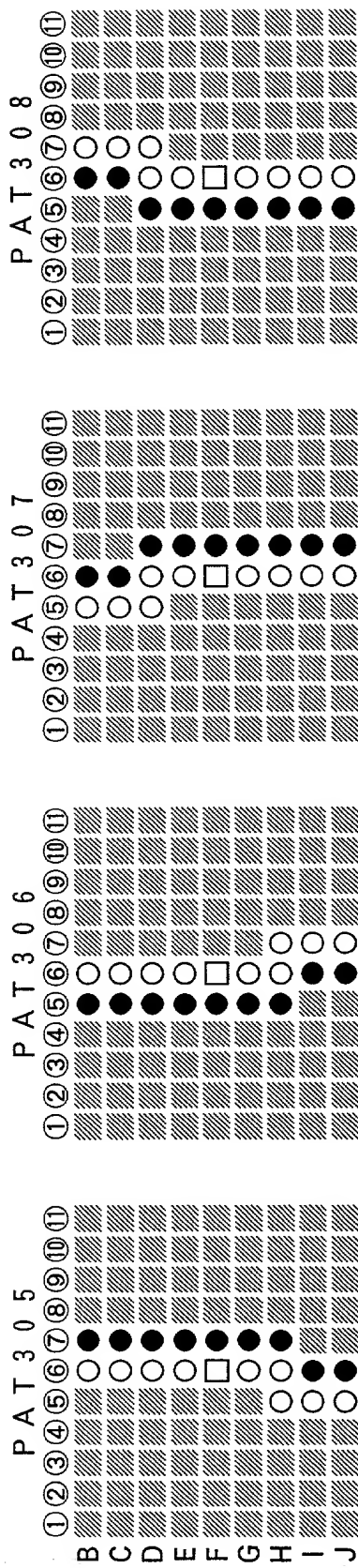
① 00 1100 00  
② 00 1110 00  
③ 00 1111 00

00 0011 00  
00 0111 00  
00 1111 00

00 1100 00  
00 1110 00  
00 1111 00

00 0011 00  
00 0111 00  
00 1111 00

FIG. 28

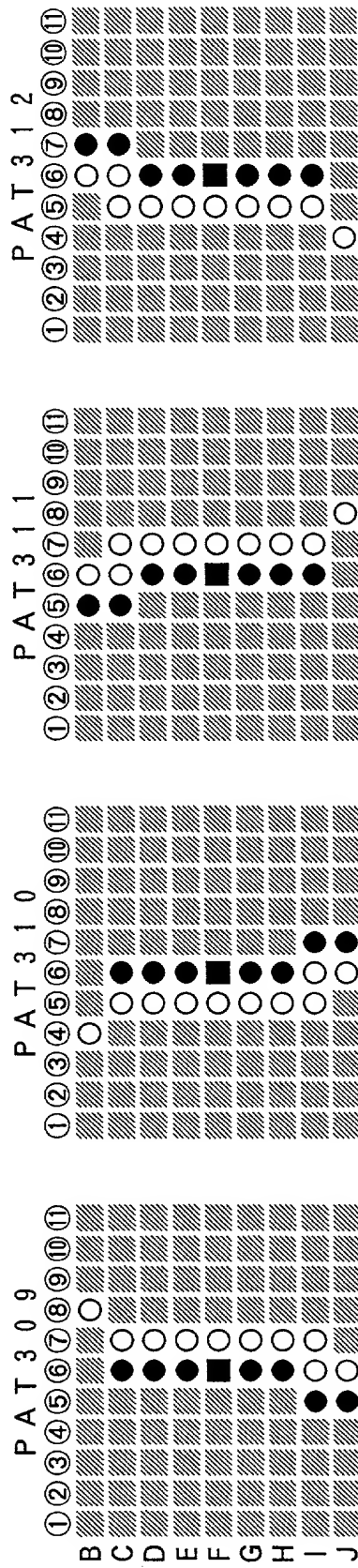


① 00 0001 00  
② 00 0011 00  
③ 00 0111 00

00 1000 00  
00 1100 00  
00 1110 00

00 0001 00  
00 0011 00  
00 0111 00

00 1000 00  
00 1100 00  
00 1110 00



① 00 1110 00  
② 00 1100 00  
③ 00 1111 00

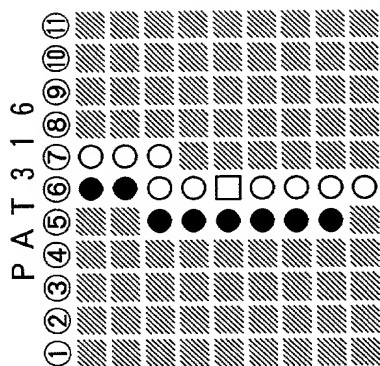
00 0111 00  
00 0011 00  
00 1111 00

00 1110 00  
00 1100 00  
00 1111 00

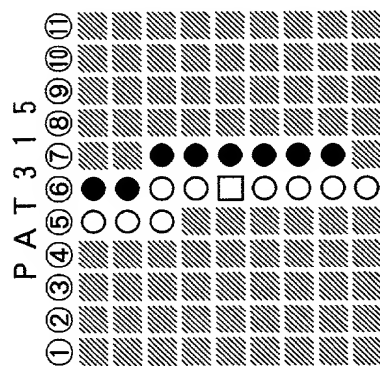
00 0111 00  
00 0011 00  
00 1111 00



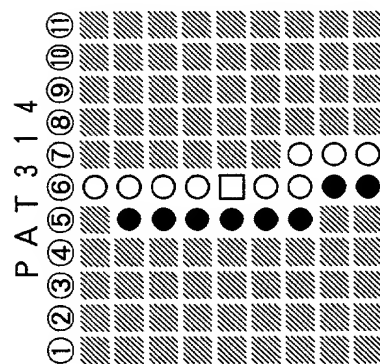
FIG. 29



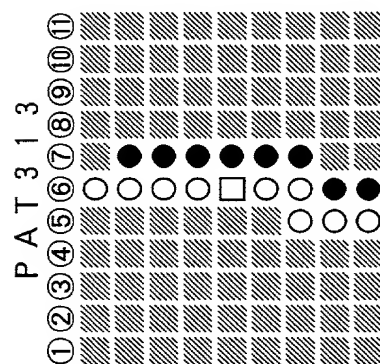
00	0000	00
00	1000	00
00	1100	00



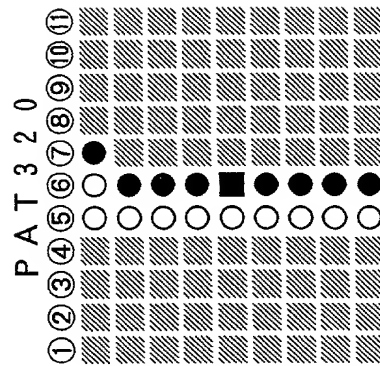
00	0000	00
00	0001	00
00	0011	00



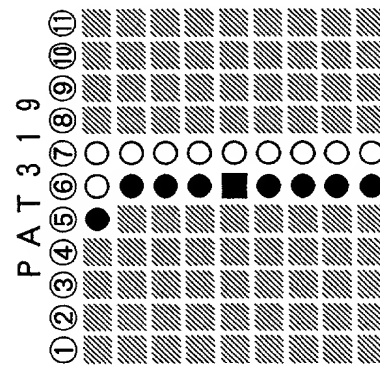
00	0000	00
00	1000	00
00	1100	00



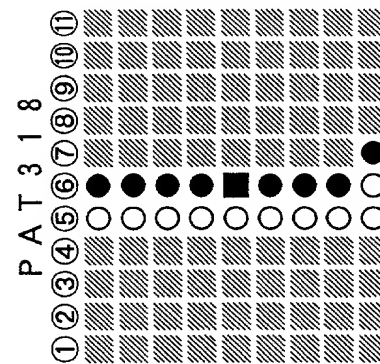
00	0000	00
00	0001	00
00	0011	00



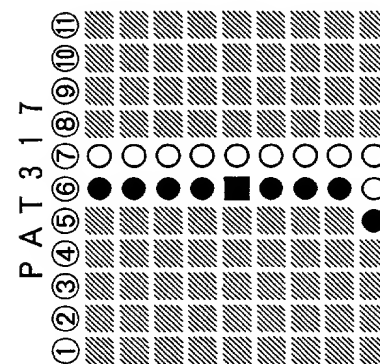
00	0111	00
00	0011	00
00	1111	00



00	1110	00
00	1100	00
00	1111	00



00 0111 00  
00 0011 00  
00 1111 00



00	1110	00
00	1100	00
00	1111	00



FIG. 30

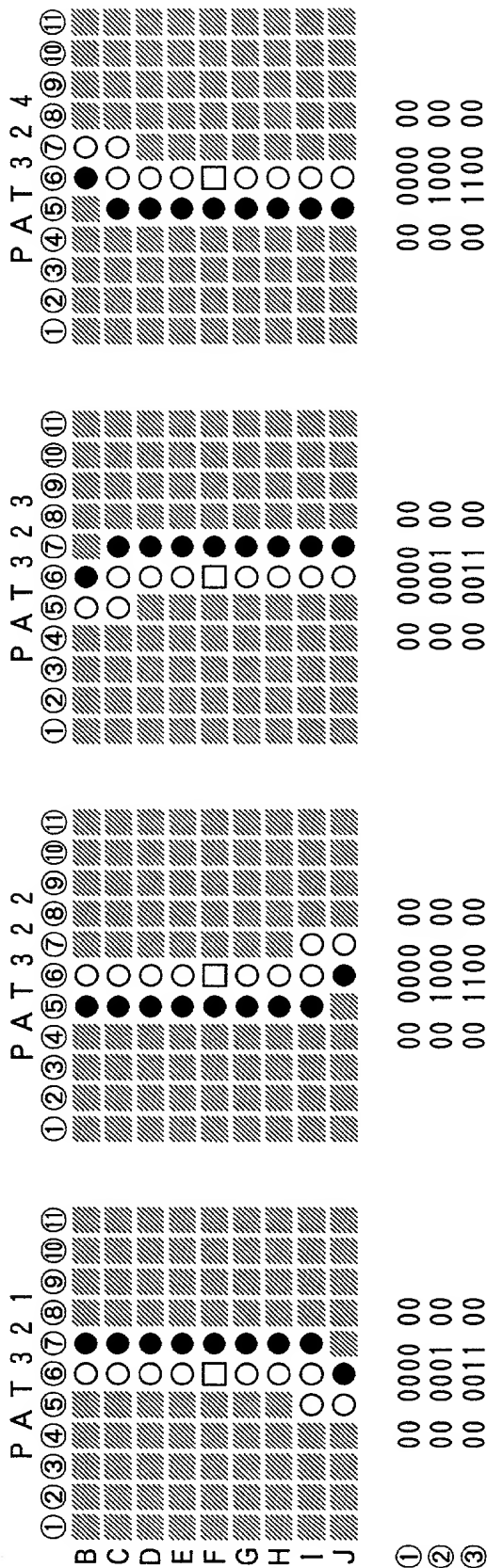


FIG. 31

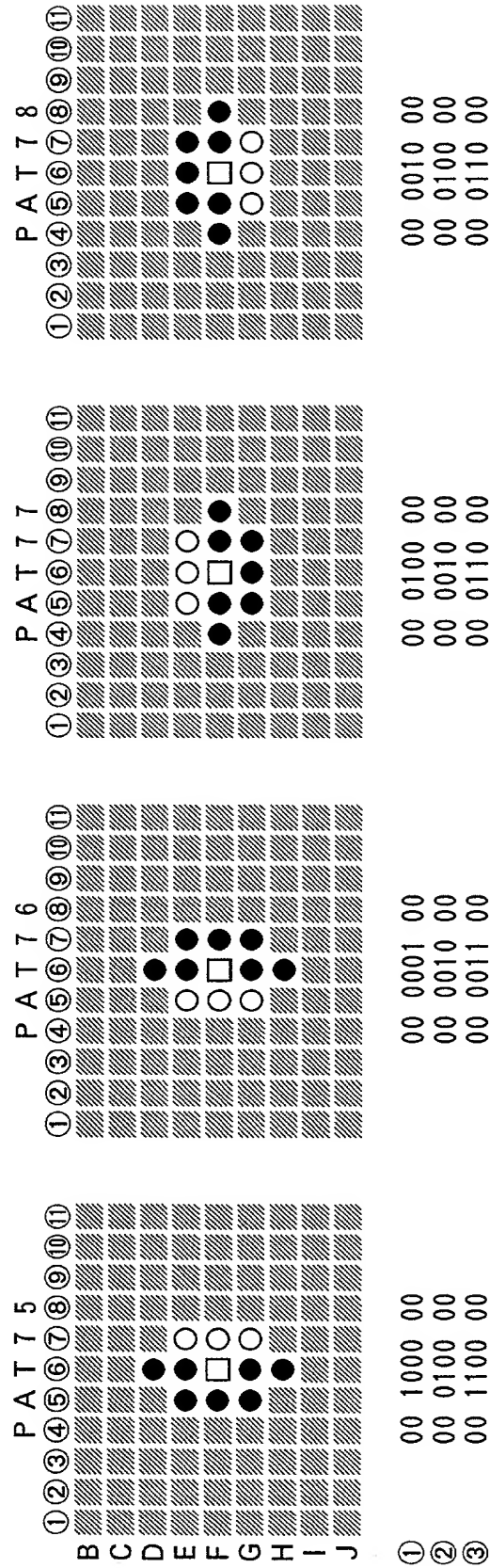
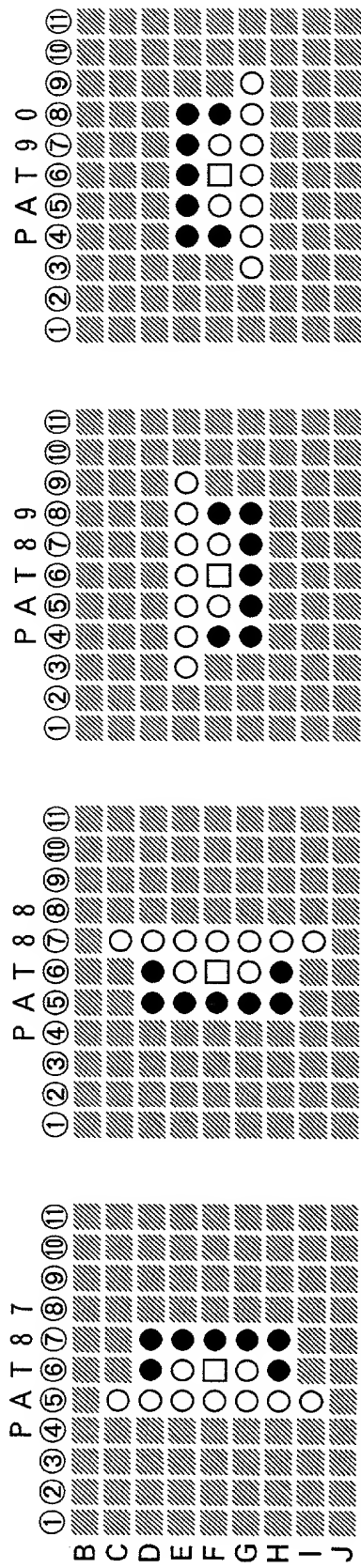




FIG. 33

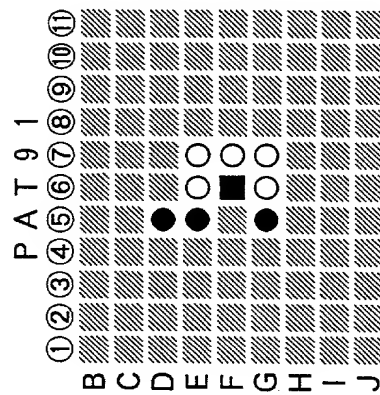


① 00 0000 00  
② 00 0001 00  
③ 00 0011 00

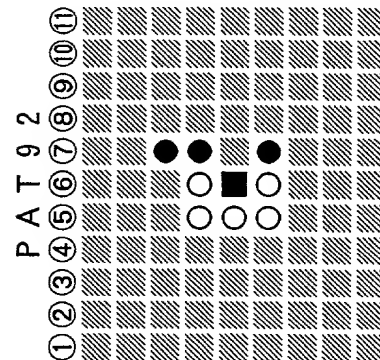
00 0000 00  
00 1000 00  
00 1100 00

00 0000 00  
00 0100 00  
00 0010 00

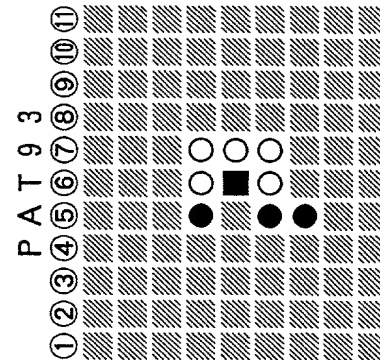
00 0000 00  
00 0100 00  
00 0010 00



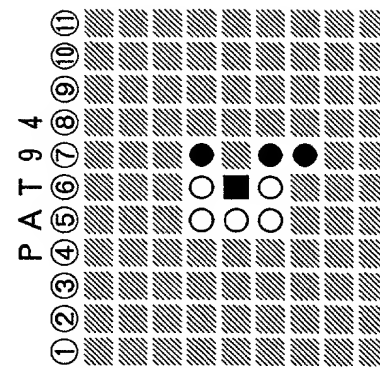
① 00 1000 00  
② 00 1100 00  
③ 00 1110 00



00 0001 00  
00 0011 00  
00 0111 00

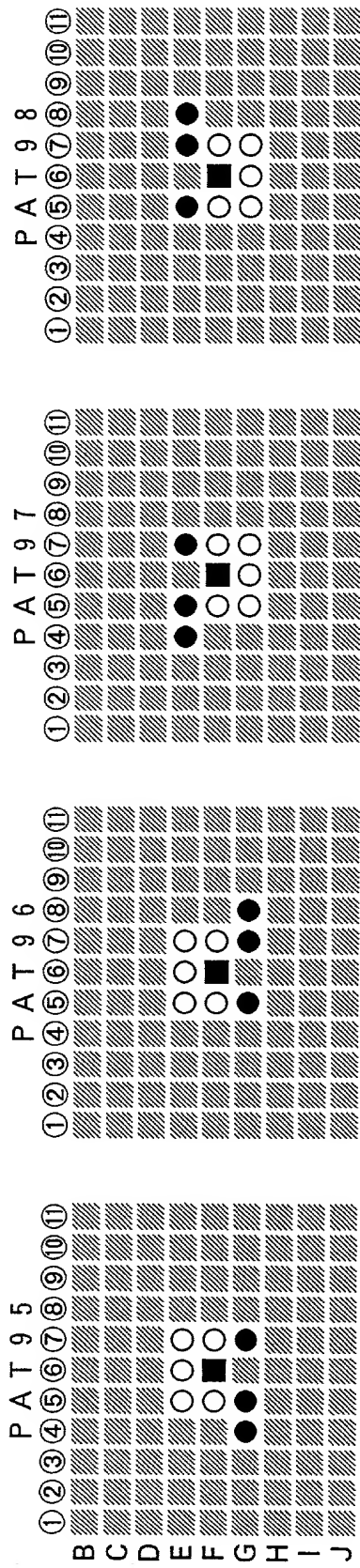


00 1000 00  
00 1100 00  
00 1110 00



00 0001 00  
00 0011 00  
00 0111 00

FIG. 34

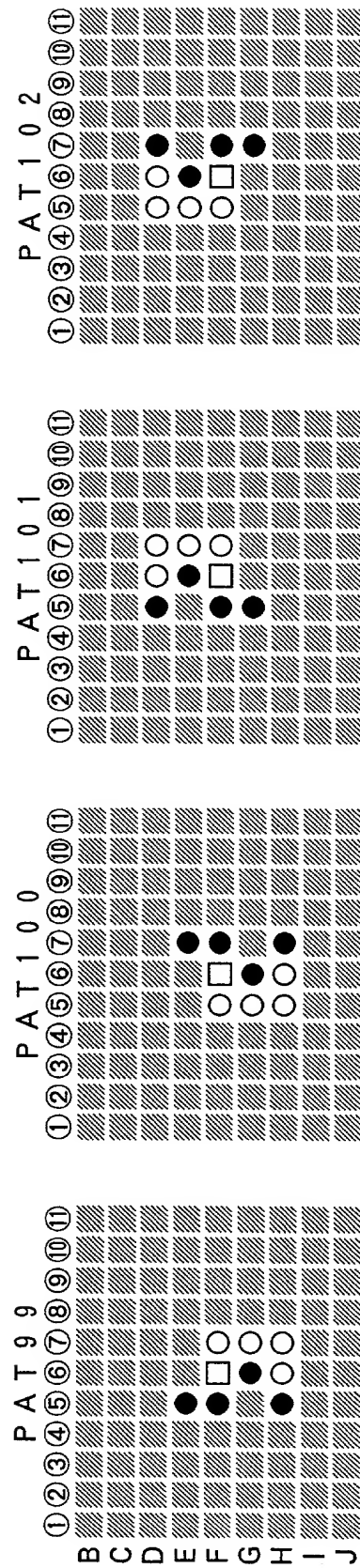


① 00 0100 00  
② 00 0110 00  
③ 00 1110 00

00 0010 00  
00 0110 00  
00 0111 00

00 0100 00  
00 0110 00  
00 1110 00

00 0010 00  
00 0110 00  
00 0111 00



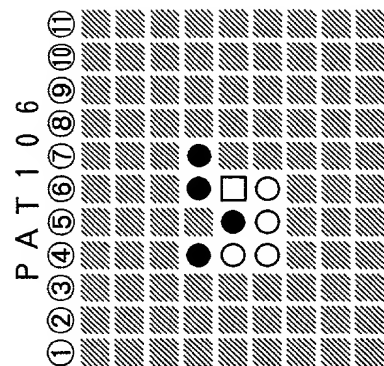
① 00 0000 00  
② 00 1000 00  
③ 00 1100 00

00 0000 00  
00 0001 00  
00 0011 00

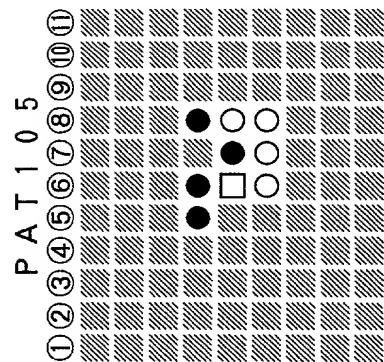
00 0000 00  
00 1000 00  
00 1100 00

00 0000 00  
00 0001 00  
00 0011 00

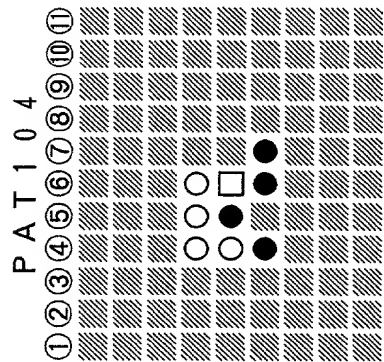
FIG. 35



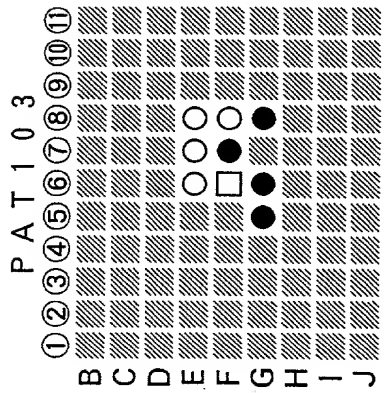
00 0000 00  
00 0100 00  
00 0110 00



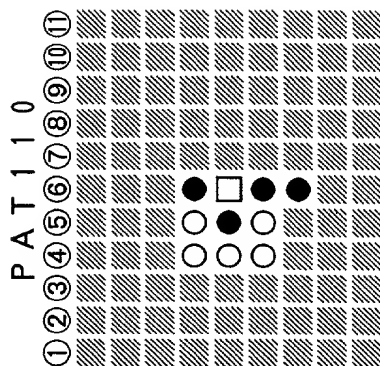
00 0000 00  
00 0010 00  
00 0110 00



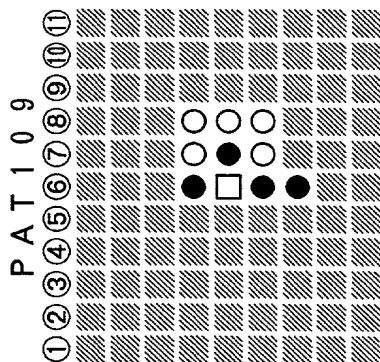
00 0000 00  
00 0100 00  
00 0110 00



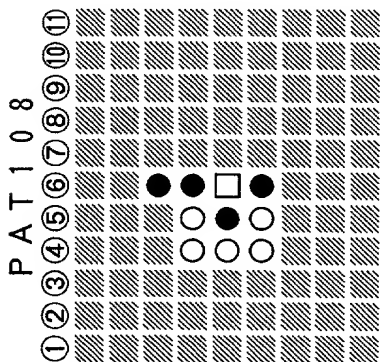
① 00 0000 00  
② 00 0010 00  
③ 00 0110 00



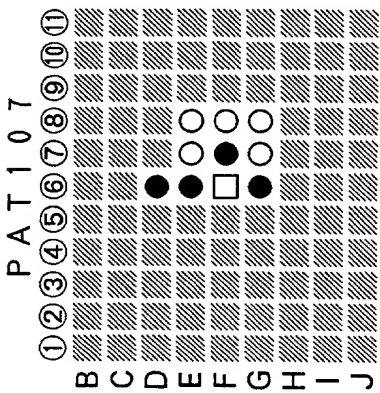
00 0000 00  
00 1000 00  
00 1100 00



00 0000 00  
00 0001 00  
00 0011 00



00 0000 00  
00 1000 00  
00 1100 00



① 00 0000 00  
② 00 0001 00  
③ 00 0011 00

FIG. 36

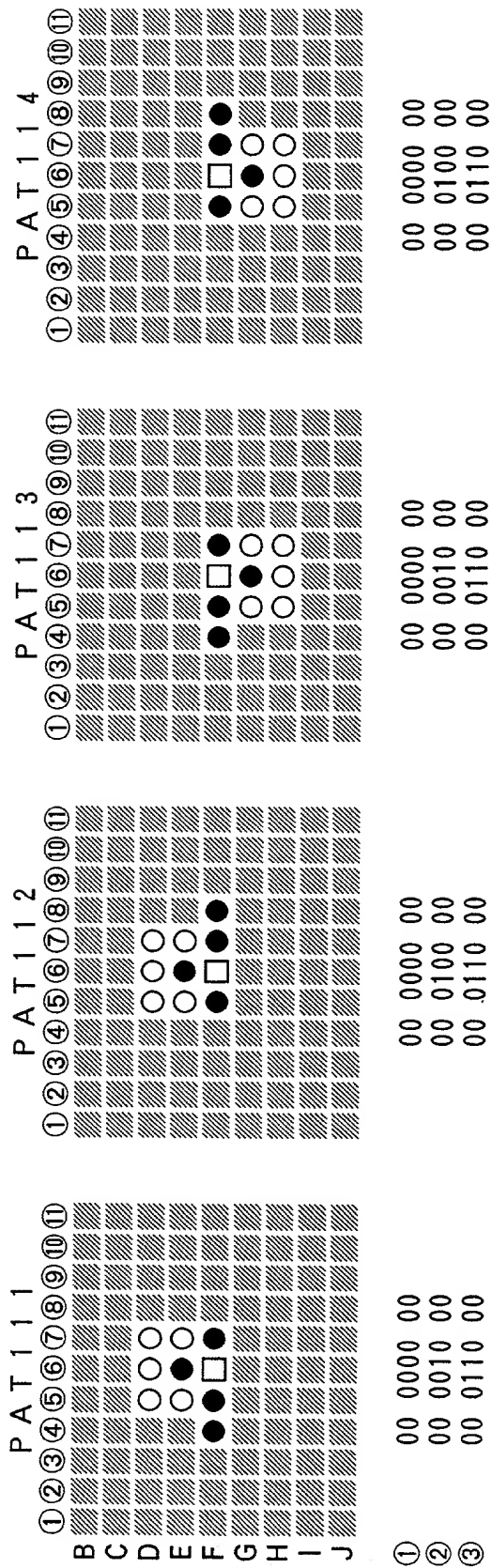
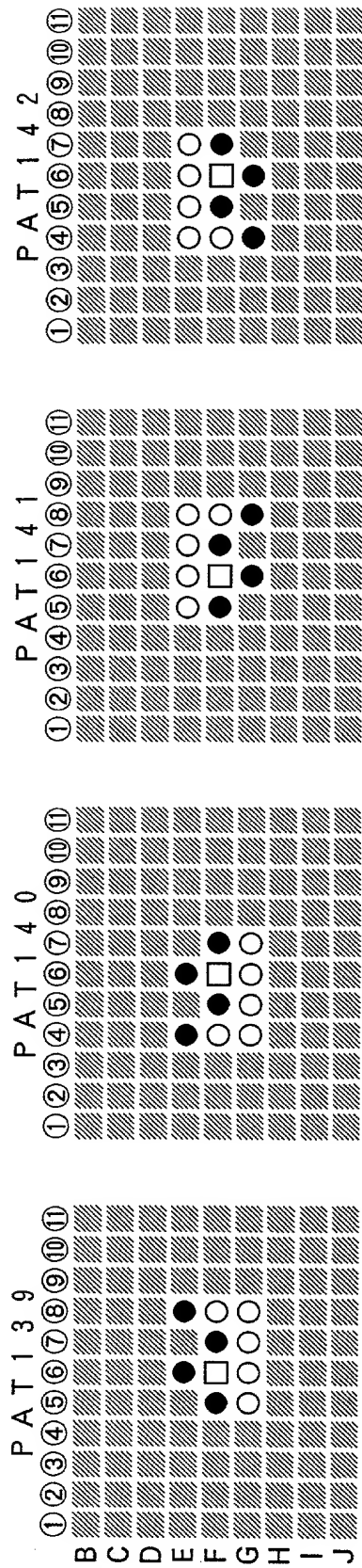




FIG. 37

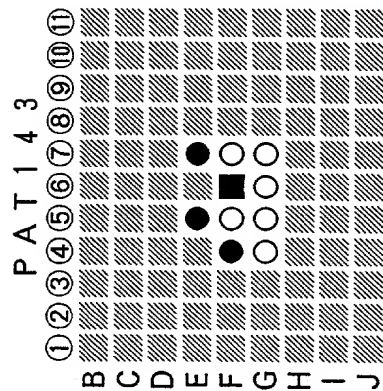


① 00 0000 00  
② 00 0010 00  
③ 00 0110 00

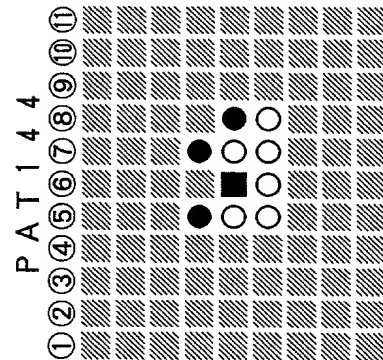
00 0000 00  
00 0100 00  
00 0110 00

00 0000 00  
00 0010 00  
00 0110 00

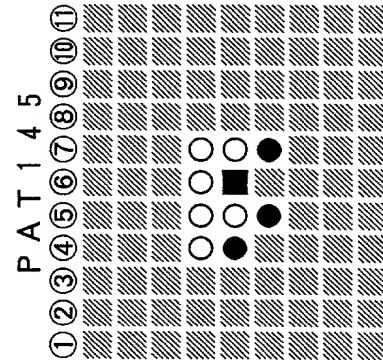
00 0000 00  
00 0100 00  
00 0110 00



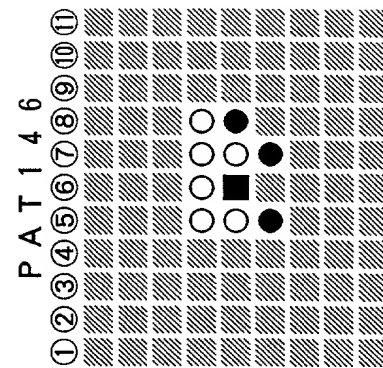
① 00 0100 00  
② 00 0110 00  
③ 00 1110 00



00 0010 00  
00 0110 00  
00 0111 00



00 0100 00  
00 0110 00  
00 1110 00



00 0010 00  
00 0110 00  
00 0111 00



FIG. 38

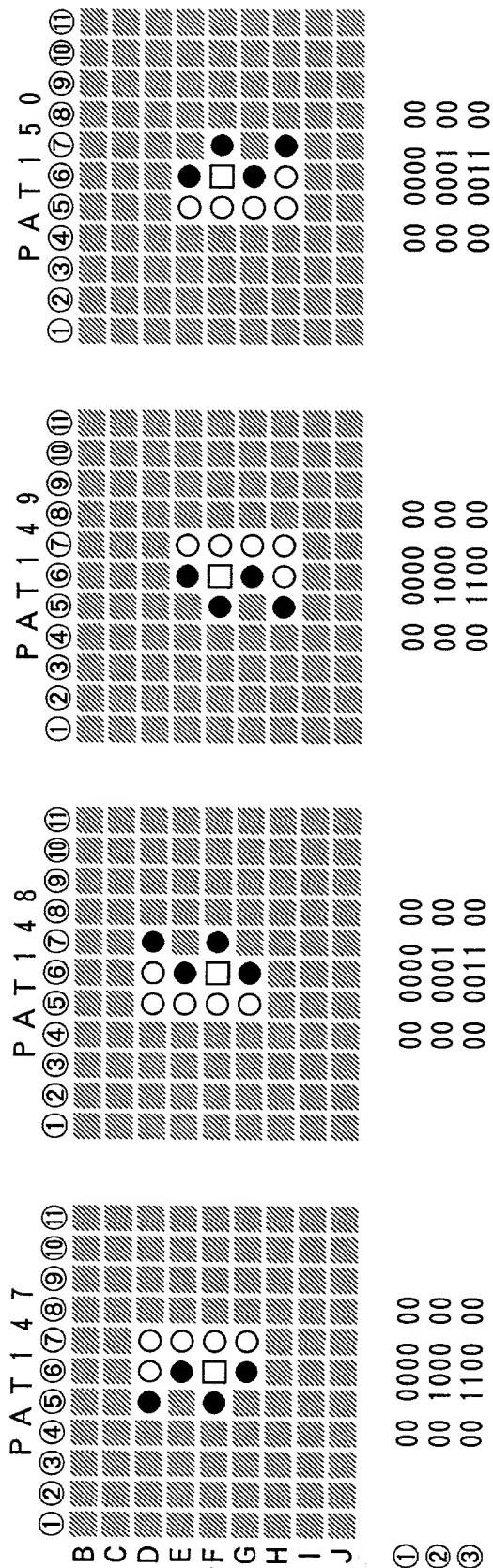


FIG. 39A

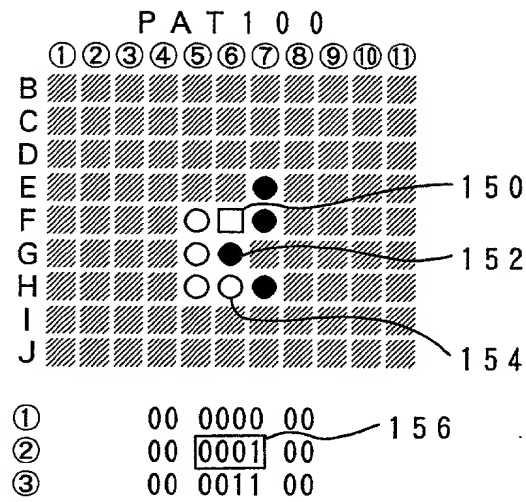


FIG. 39B

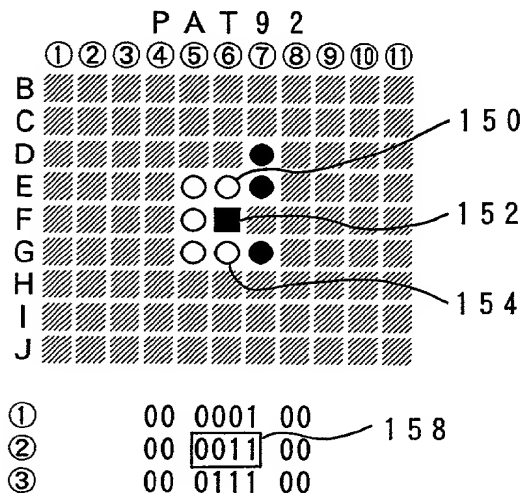


FIG. 39C

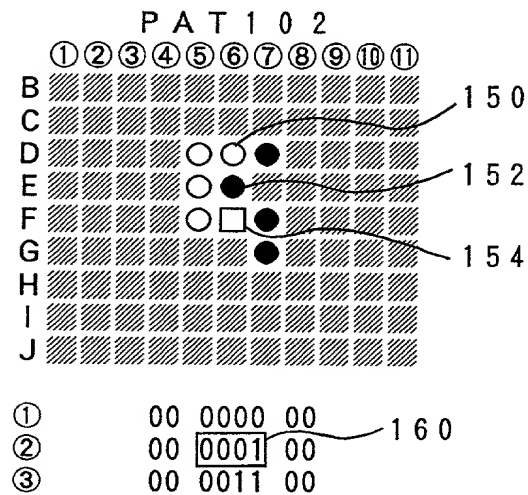
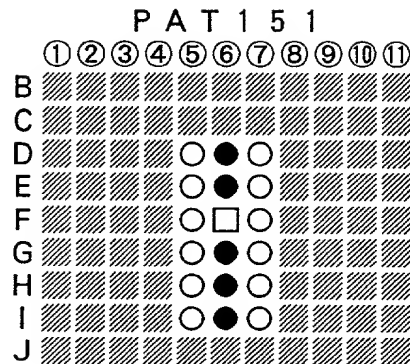


FIG. 40

DENSITY-PRESERVATION-PATTERN COMBINATIONS		
PAT91	PAT99	PAT101
PAT92	PAT100	PAT102
PAT93	PAT101	PAT99
PAT94	PAT102	PAT100

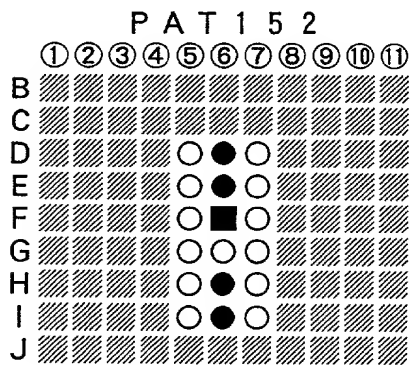
0995560.04101

FIG. 41A



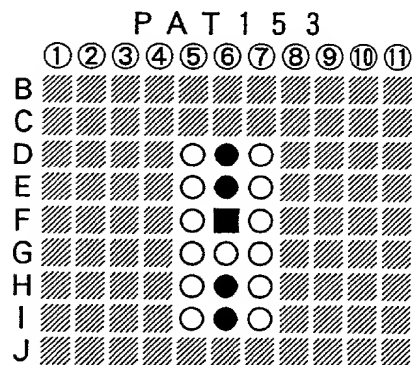
①      00 0100 00  
 ②      00 0110 00  
 ③      00 0111 00

FIG. 41B



①      00 0011 00  
 ②      00 0111 00  
 ③      00 1111 00

FIG. 41C



①      00 1100 00  
 ②      00 1110 00  
 ③      00 1111 00

FIG. 42A

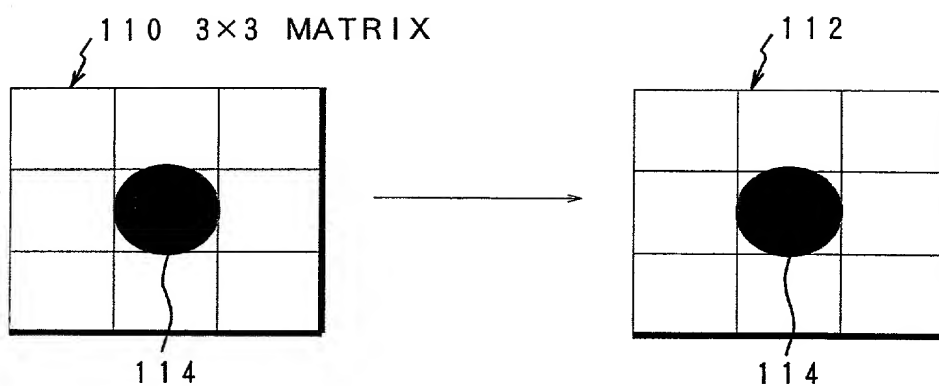


FIG. 42B

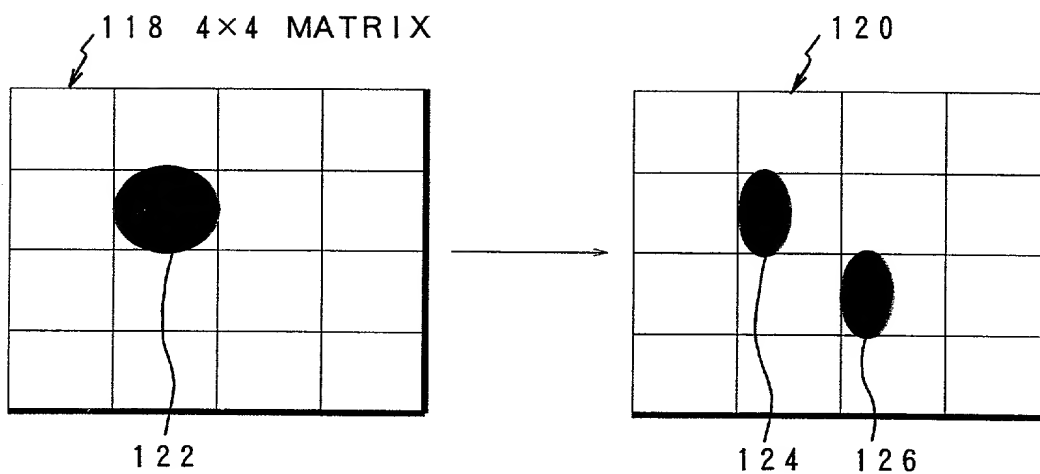


FIG. 42C

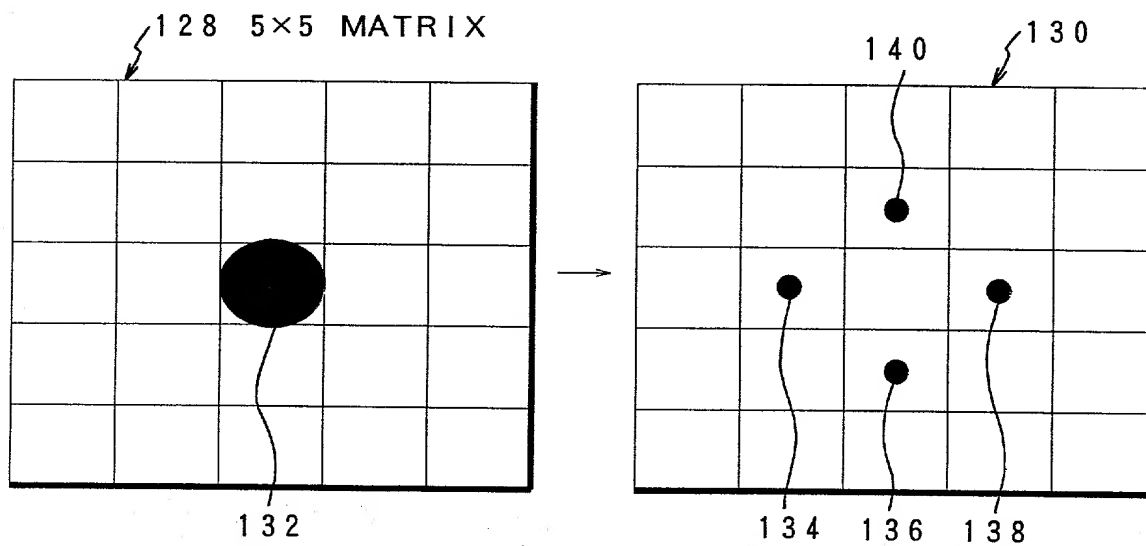
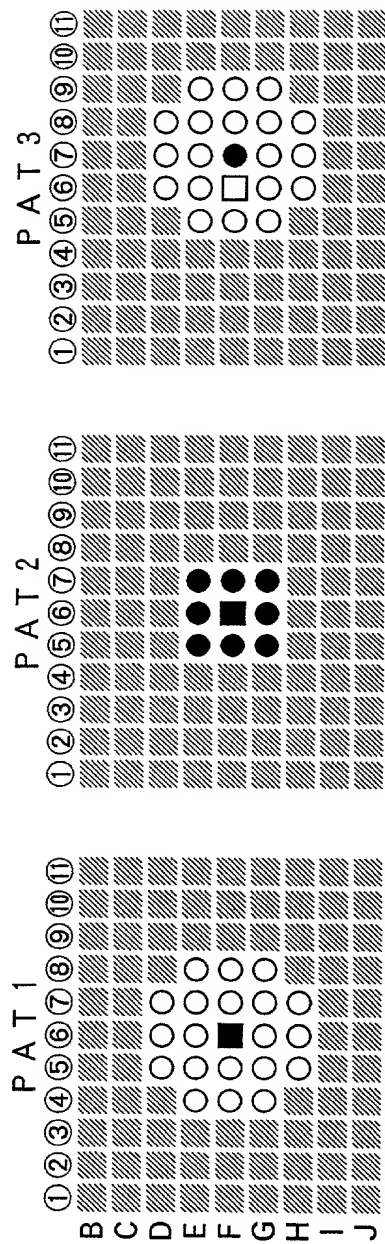


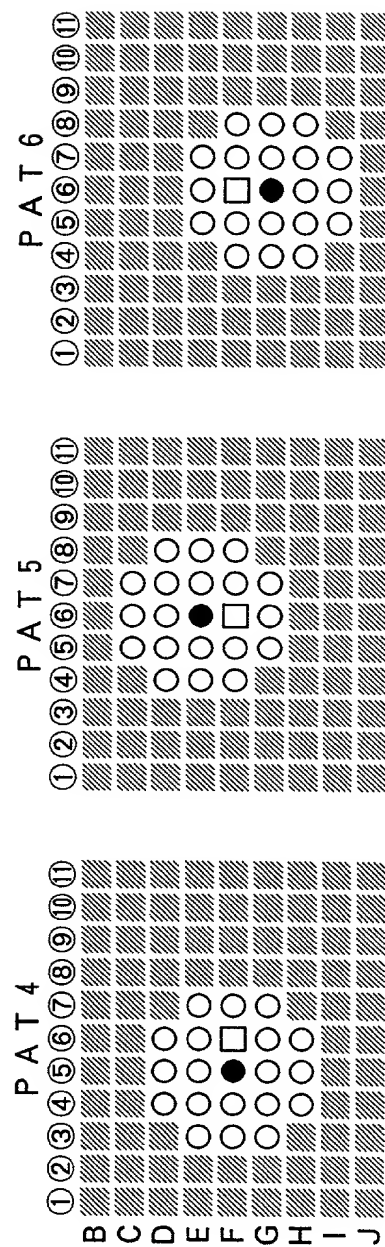
FIG. 43



① 00 0000 00  
② 00 0010 00  
③ 00 0110 00

00 1111 00  
00 1110 00  
00 0111 00

00 0100 00  
00 0010 00  
00 1110 00



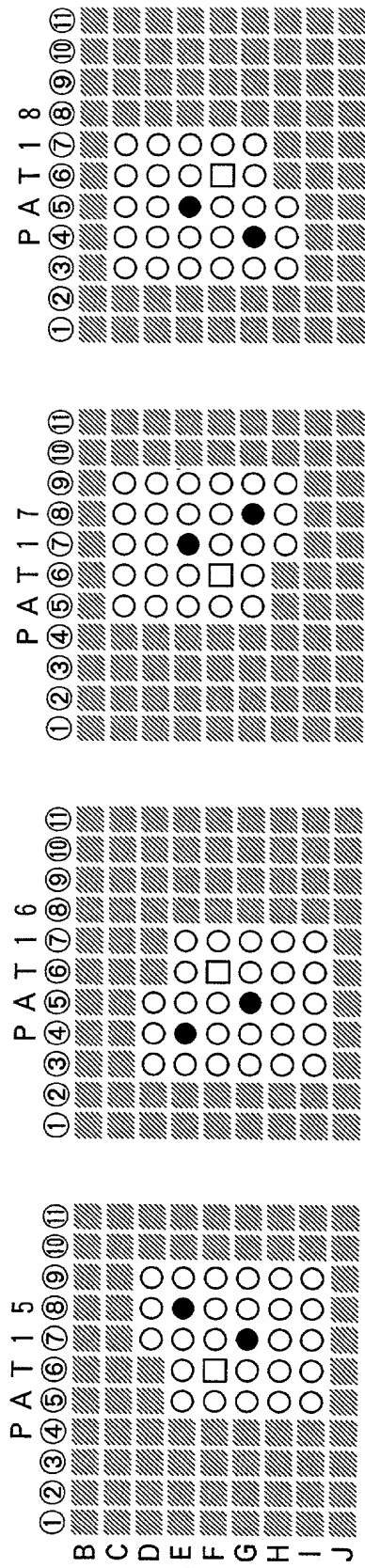
① 00 0100 00  
② 00 0010 00  
③ 00 0111 00

00 0010 00  
00 0100 00  
00 0110 00

00 0100 00  
00 0010 00  
00 0110 00



FIG. 45

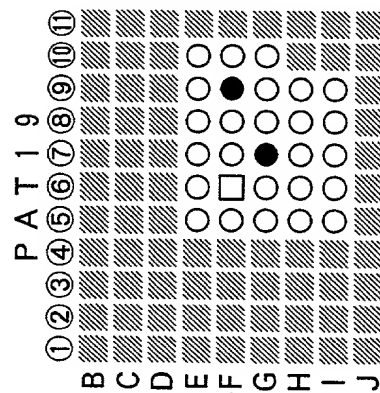


① 00 0000 00  
② 00 0100 00  
③ 00 0110 00

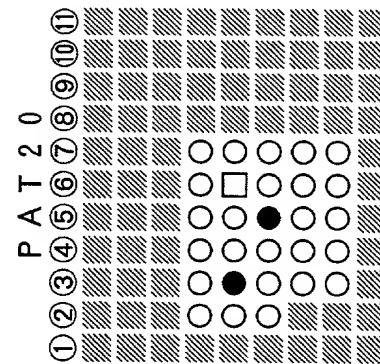
00 0000 00  
00 0010 00  
00 0110 00

00 0000 00  
00 0100 00  
00 0110 00

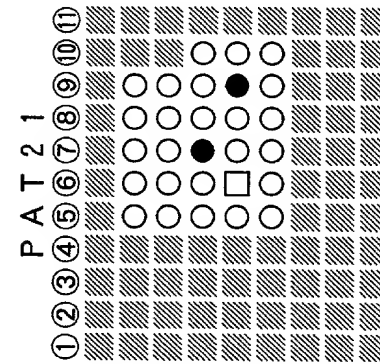
00 0000 00  
00 0010 00  
00 0110 00



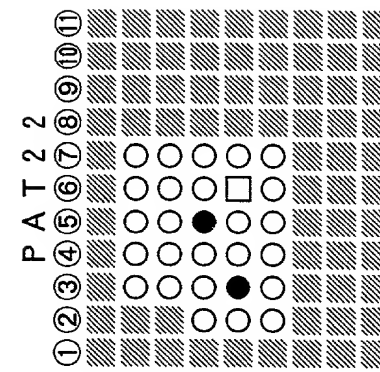
① 00 0000 00  
② 00 0100 00  
③ 00 0110 00



00 0000 00  
00 0010 00  
00 0110 00



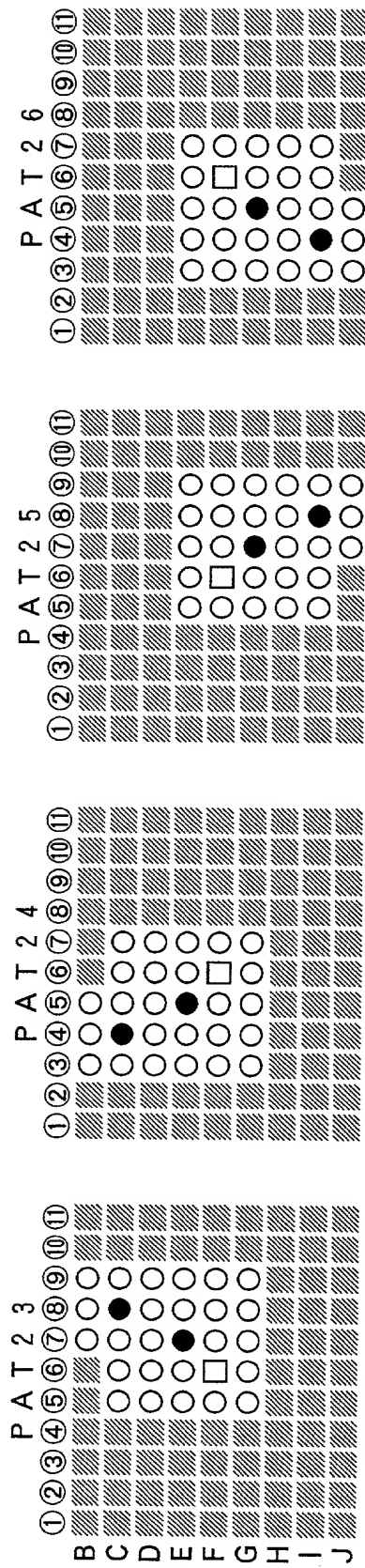
00 0000 00  
00 0100 00  
00 0110 00



00 0000 00  
00 0010 00  
00 0110 00



FIG. 46

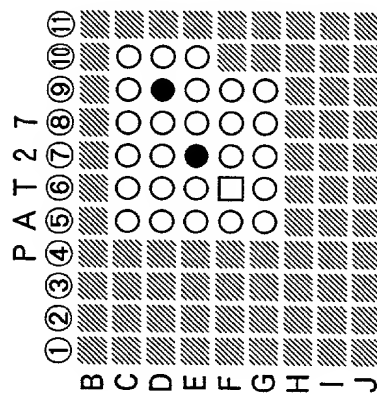


① 00 0000 00  
② 00 0100 00  
③ 00 0010 00

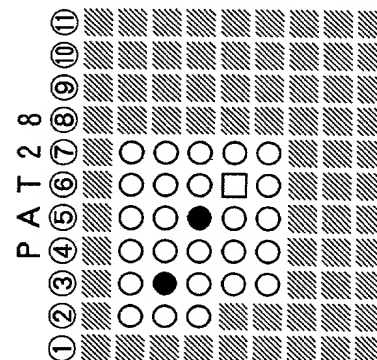
00 0000 00  
00 0010 00  
00 0110 00

00 0000 00  
00 0100 00  
00 0110 00

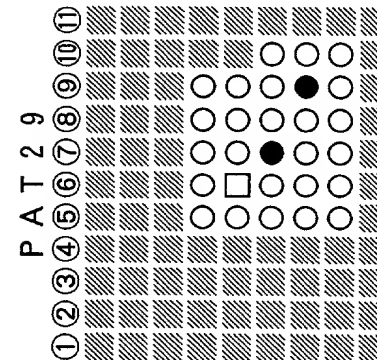
00 0000 00  
00 0010 00  
00 0110 00



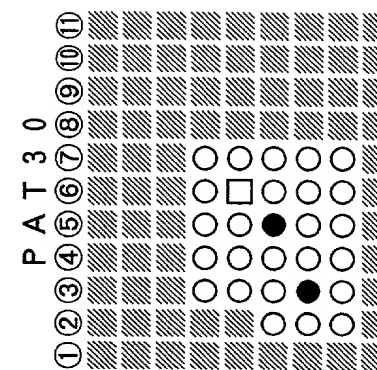
① 00 0000 00  
② 00 0100 00  
③ 00 0110 00



00 0000 00  
00 0010 00  
00 0110 00



00 0000 00  
00 0100 00  
00 0110 00



00 0000 00  
00 0010 00  
00 0110 00

FIG. 47

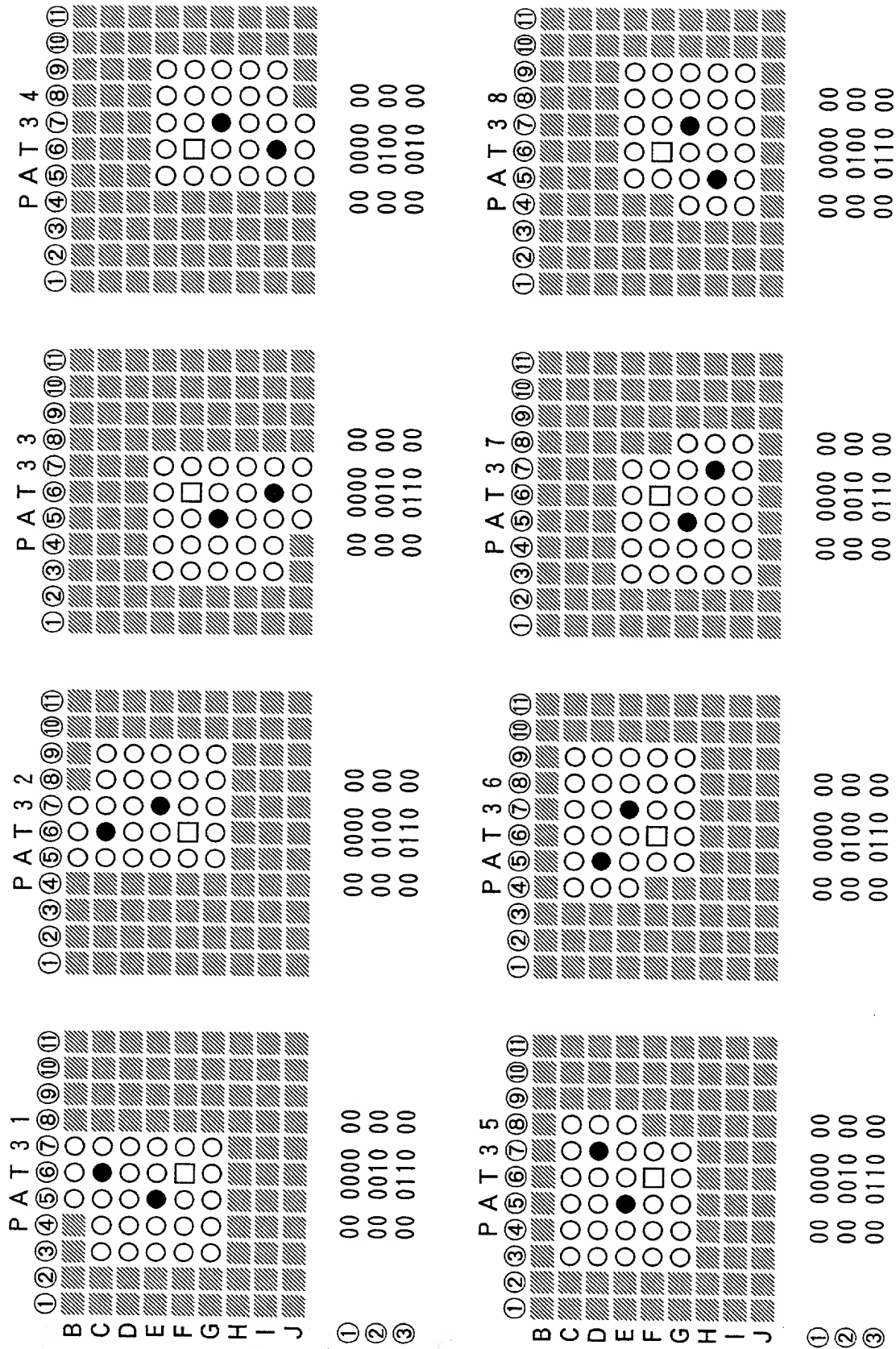
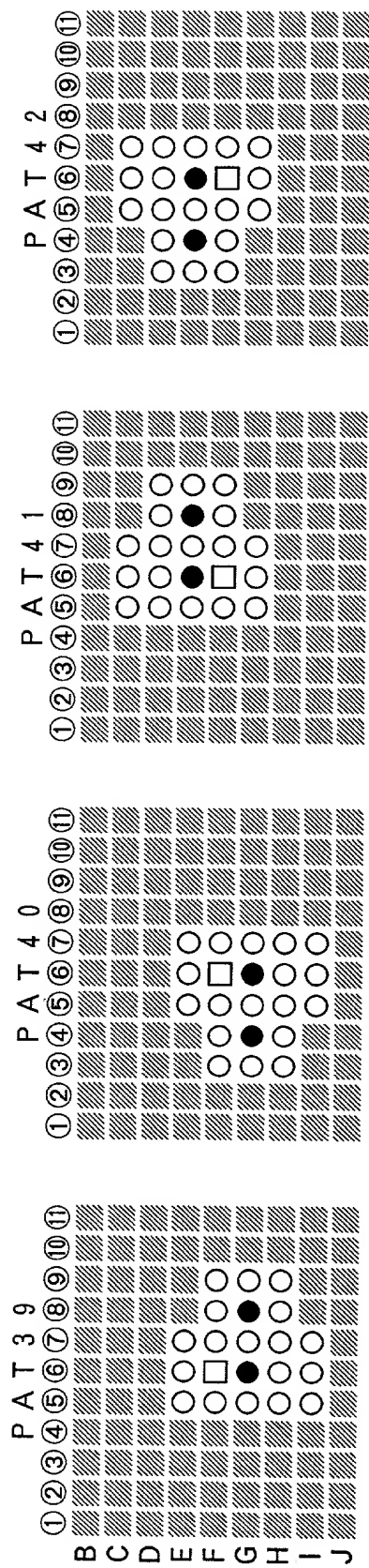


FIG. 48

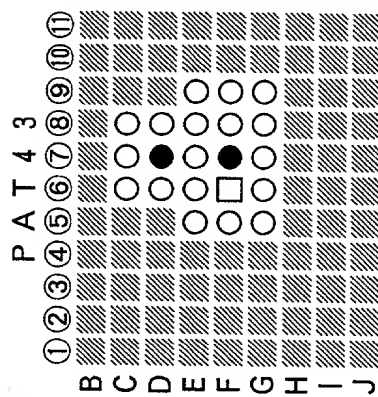


① 00 0100 00  
② 00 0110 00  
③ 00 1110 00

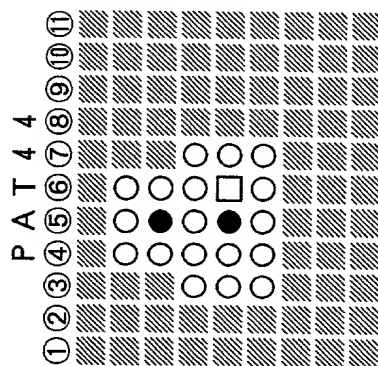
00 0010 00  
00 0110 00  
00 0111 00

00 0100 00  
00 0110 00  
00 1110 00

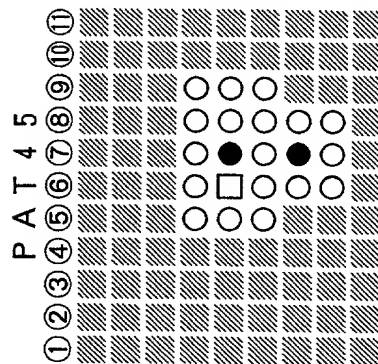
00 0010 00  
00 0110 00  
00 0111 00



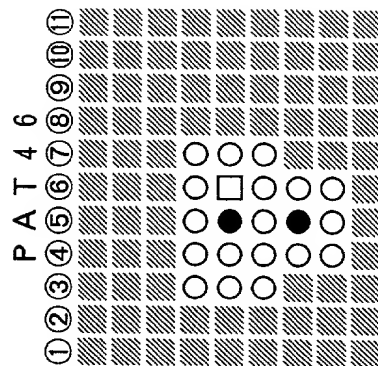
① 00 0100 00  
② 00 0110 00  
③ 00 1110 00



00 0010 00  
00 0110 00  
00 0111 00

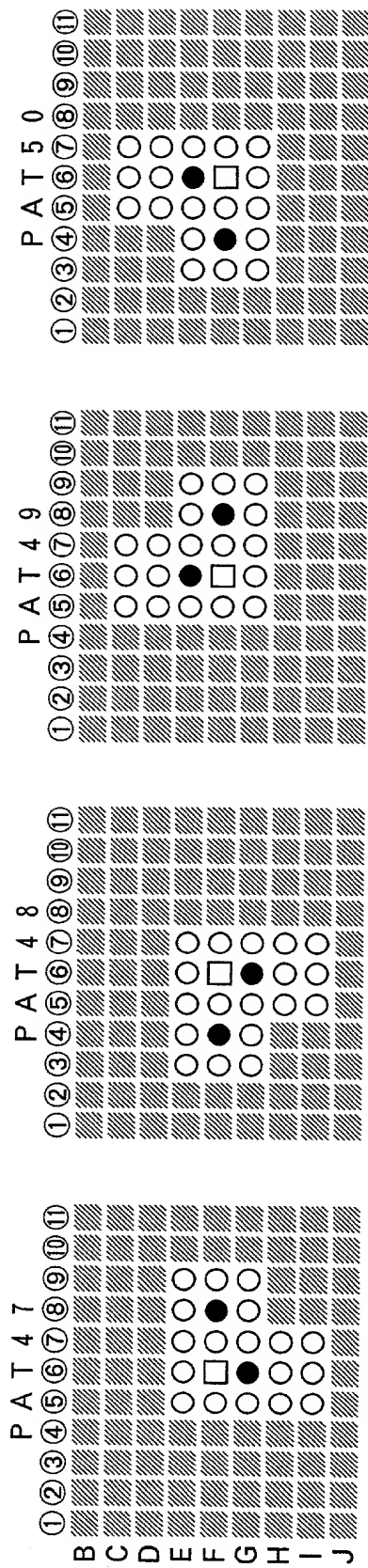


00 0100 00  
00 0110 00  
00 1110 00



00 0010 00  
00 0110 00  
00 0111 00

FIG. 49

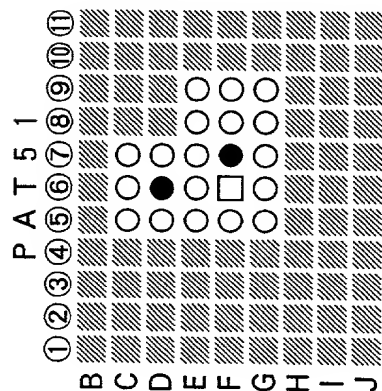


① 00 0100 00  
② 00 0110 00  
③ 00 1110 00

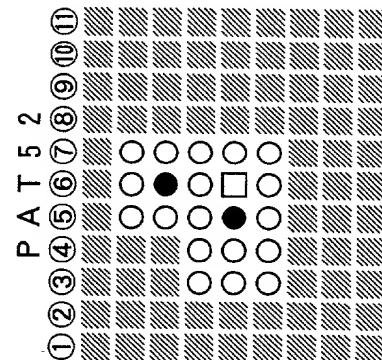
00 0010 00  
00 0110 00  
00 0111 00

00 0100 00  
00 0110 00  
00 1110 00

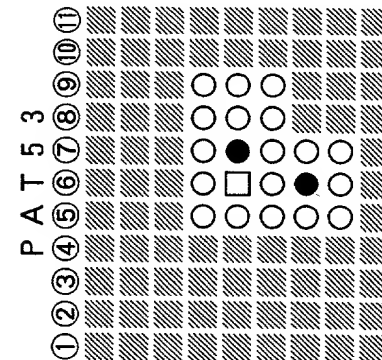
00 0010 00  
00 0110 00  
00 0111 00



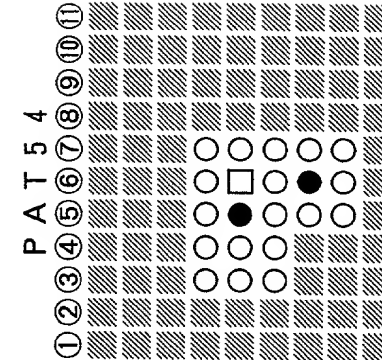
① 00 0100 00  
② 00 0110 00  
③ 00 1110 00



00 0010 00  
00 0110 00  
00 0111 00

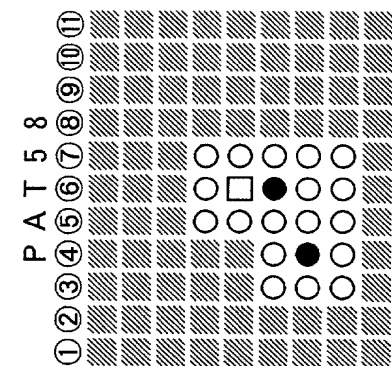


00 0100 00  
00 0110 00  
00 1110 00

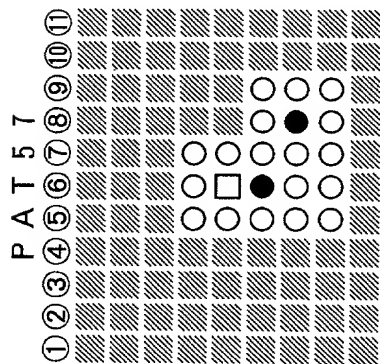


00 0010 00  
00 0110 00  
00 0111 00

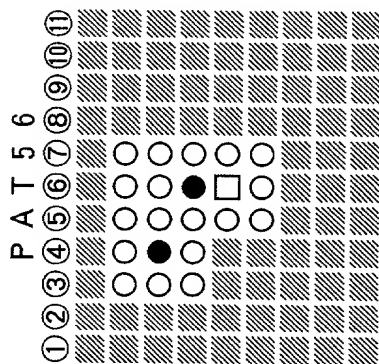
FIG. 50



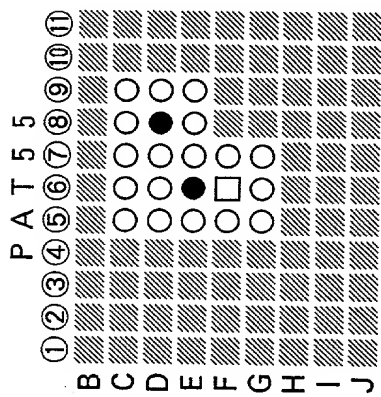
00 0010 00  
00 0110 00  
00 0111 00



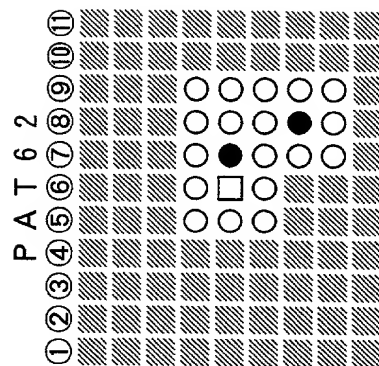
00 0100 00  
00 0110 00  
00 1110 00



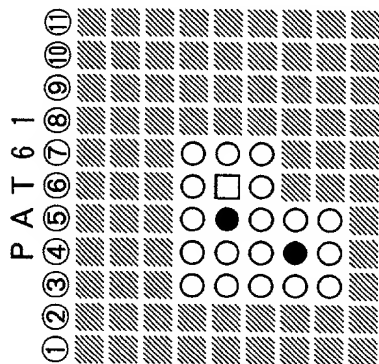
00 0010 00  
00 0110 00  
00 0111 00



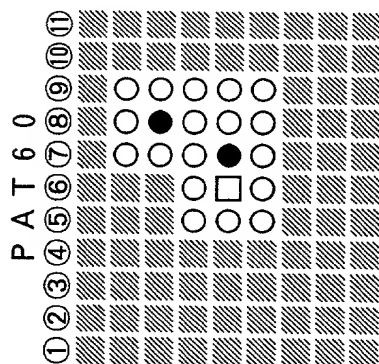
① 00 0100 00  
② 00 0110 00  
③ 00 1110 00



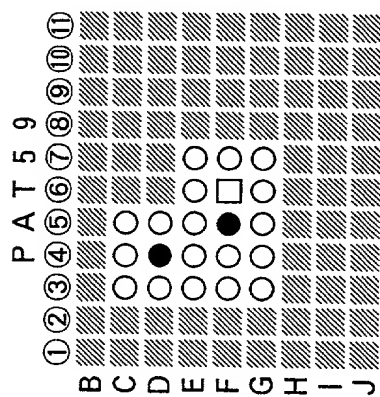
00 0100 00  
00 0110 00  
00 1110 00



00 0010 00  
00 0110 00  
00 0111 00

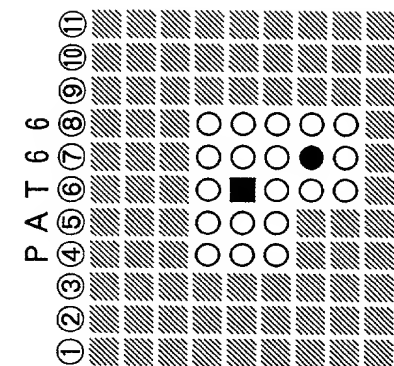


00 0100 00  
00 0110 00  
00 1110 00

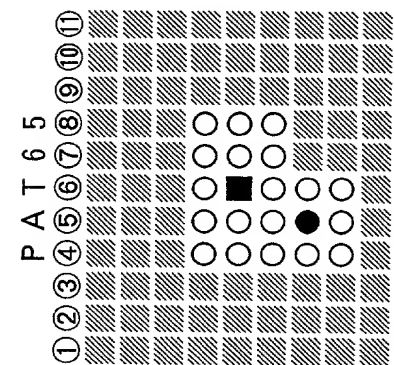


① 00 0010 00  
② 00 0110 00  
③ 00 0111 00

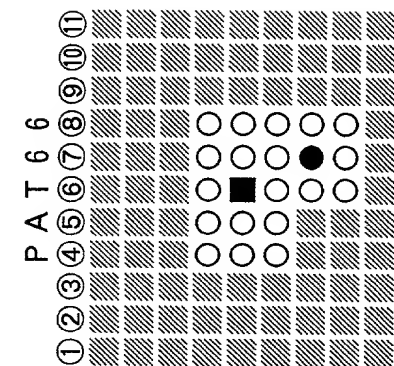
FIG. 51



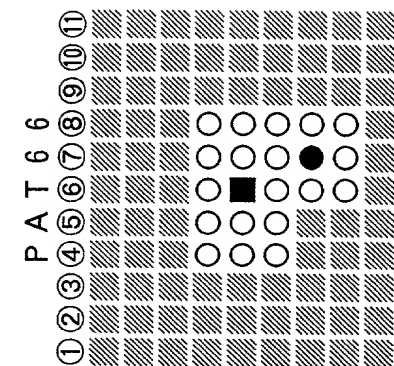
① 00 0000 00  
② 00 0100 00  
③ 00 0110 00



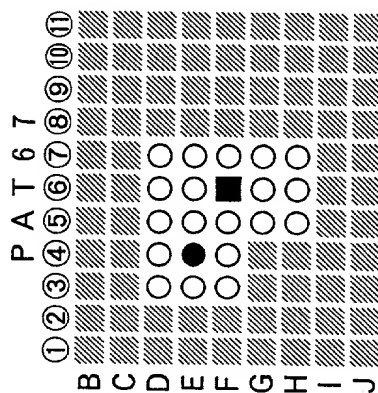
00 0000 00  
00 0010 00  
00 0110 00



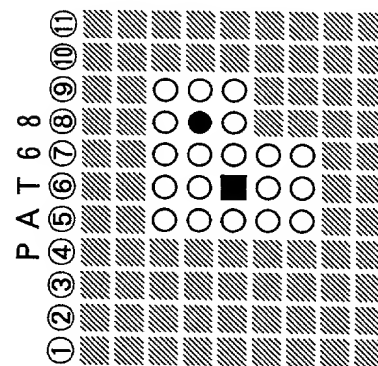
00 0000 00  
00 0100 00  
00 0110 00



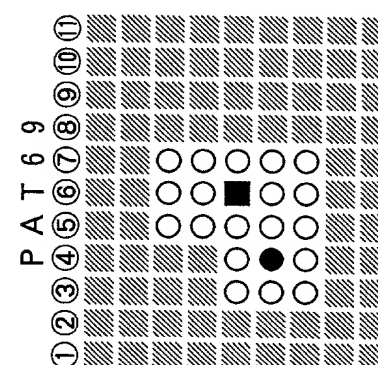
00 0000 00  
00 0010 00  
00 0110 00



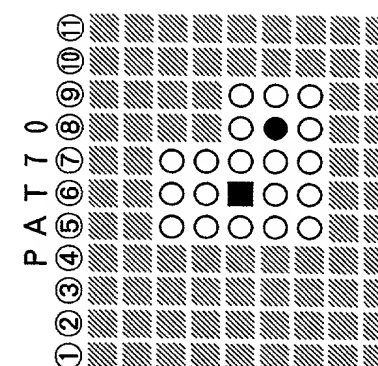
① 00 0000 00  
② 00 0100 00  
③ 00 0110 00



00 0000 00  
00 0010 00  
00 0110 00



00 0000 00  
00 0100 00  
00 0110 00



00 0000 00  
00 0010 00  
00 0110 00



FIG. 52

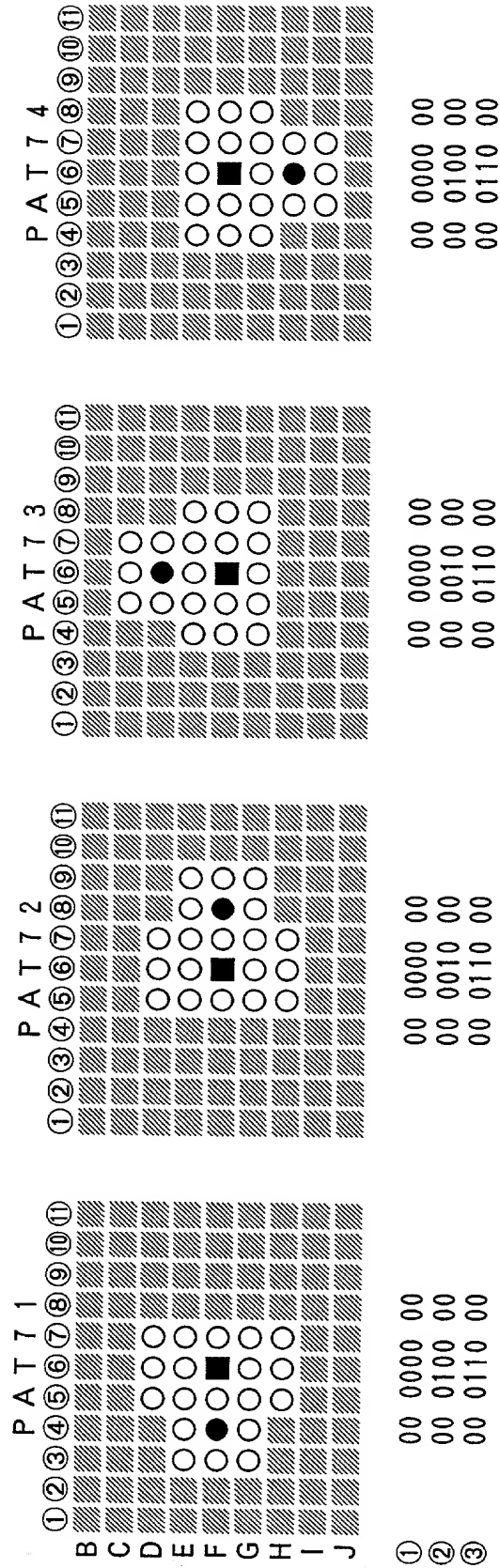


FIG. 53

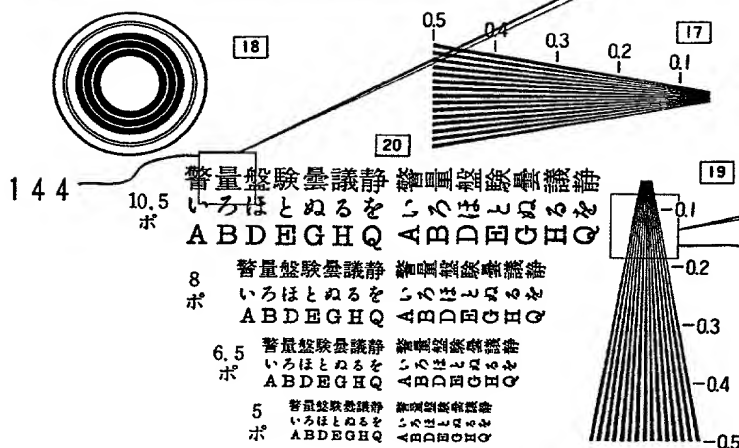
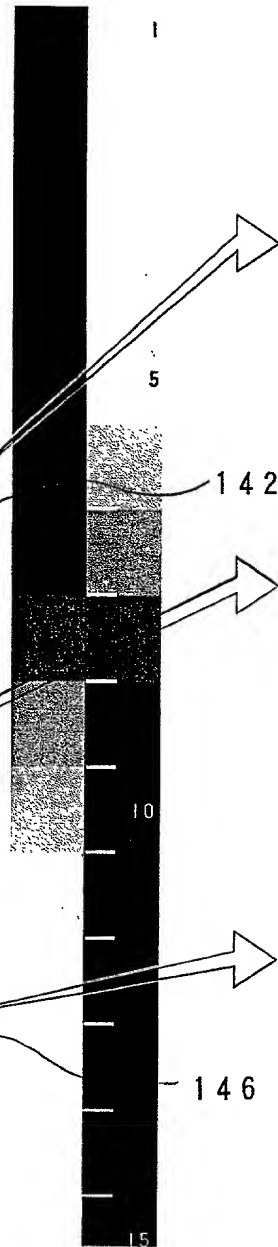




FIG. 54

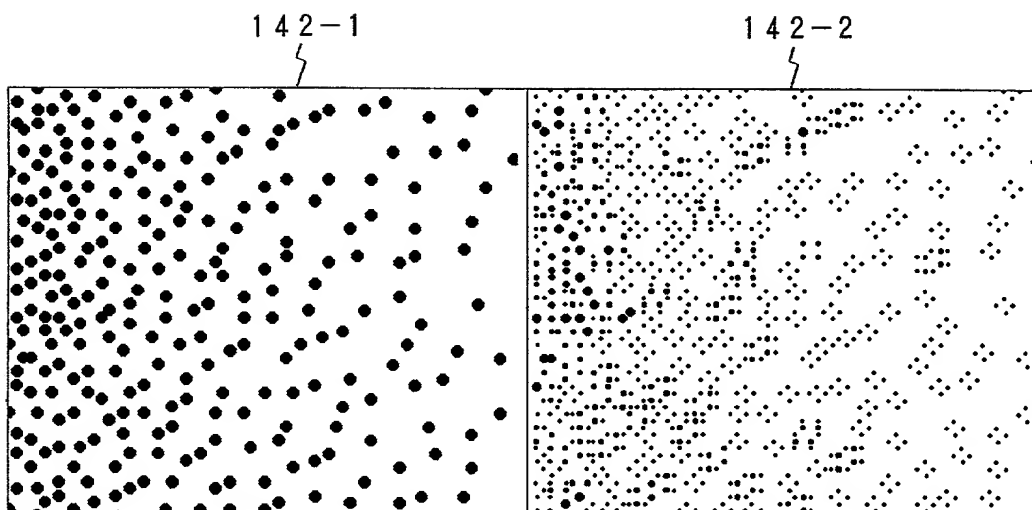


FIG. 55

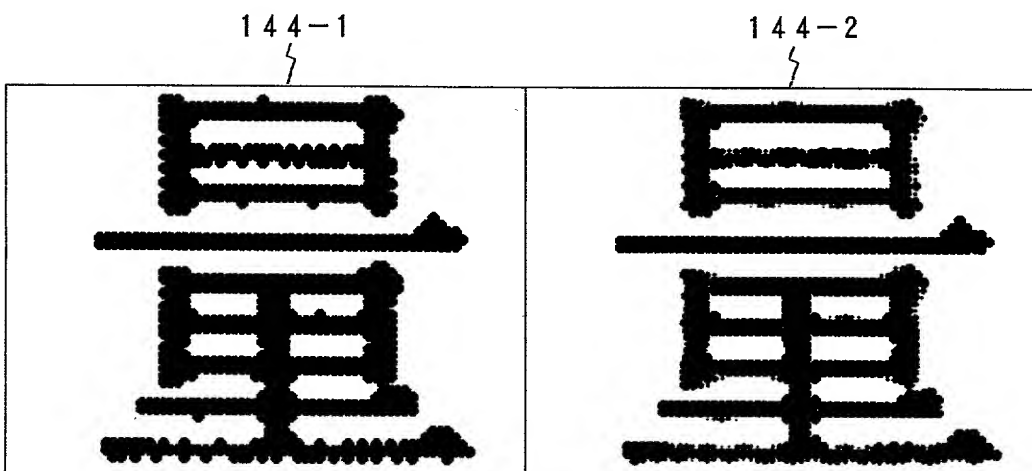
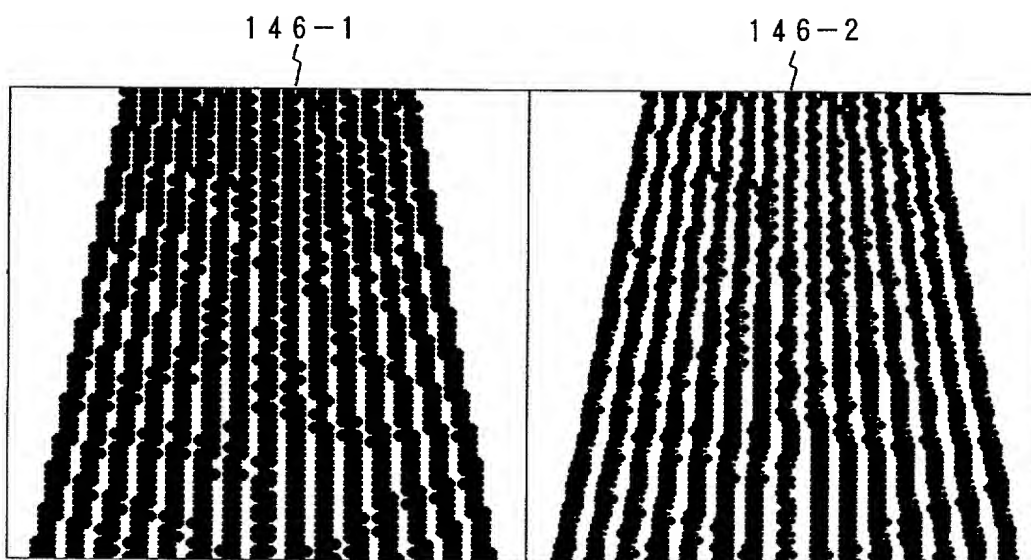


FIG. 56



095560 04101

FIG. 57

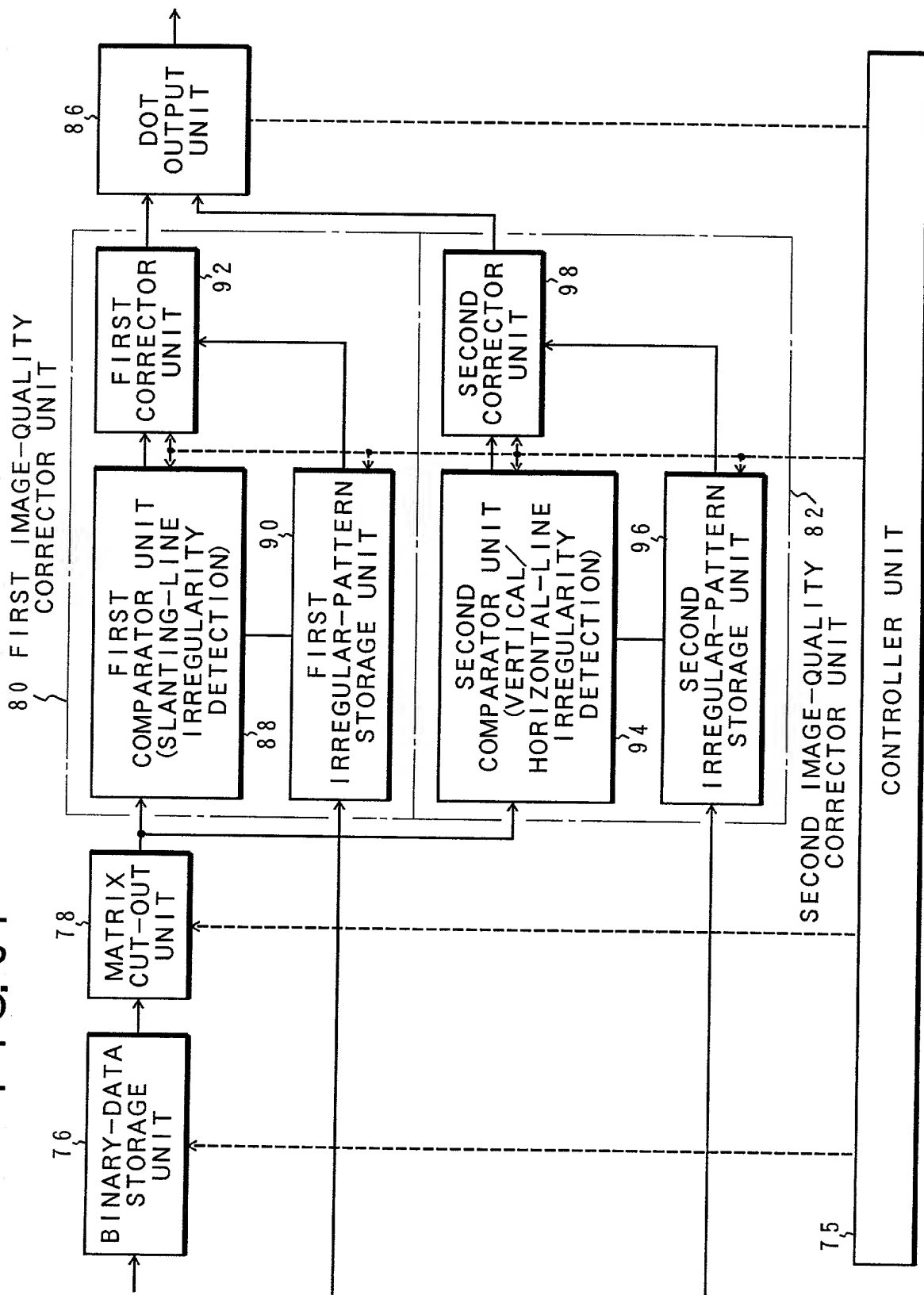


FIG. 58A

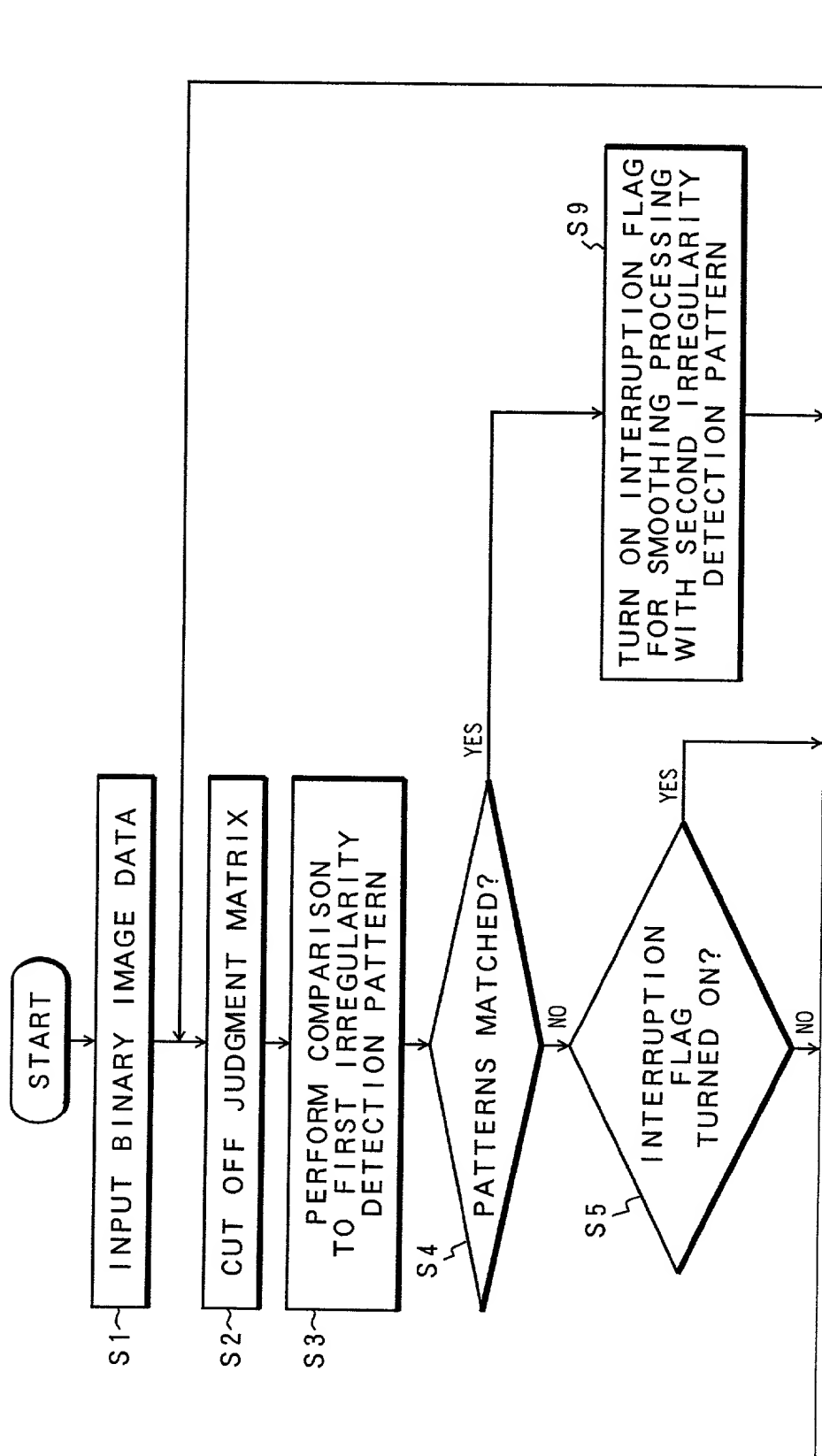


FIG. 58B

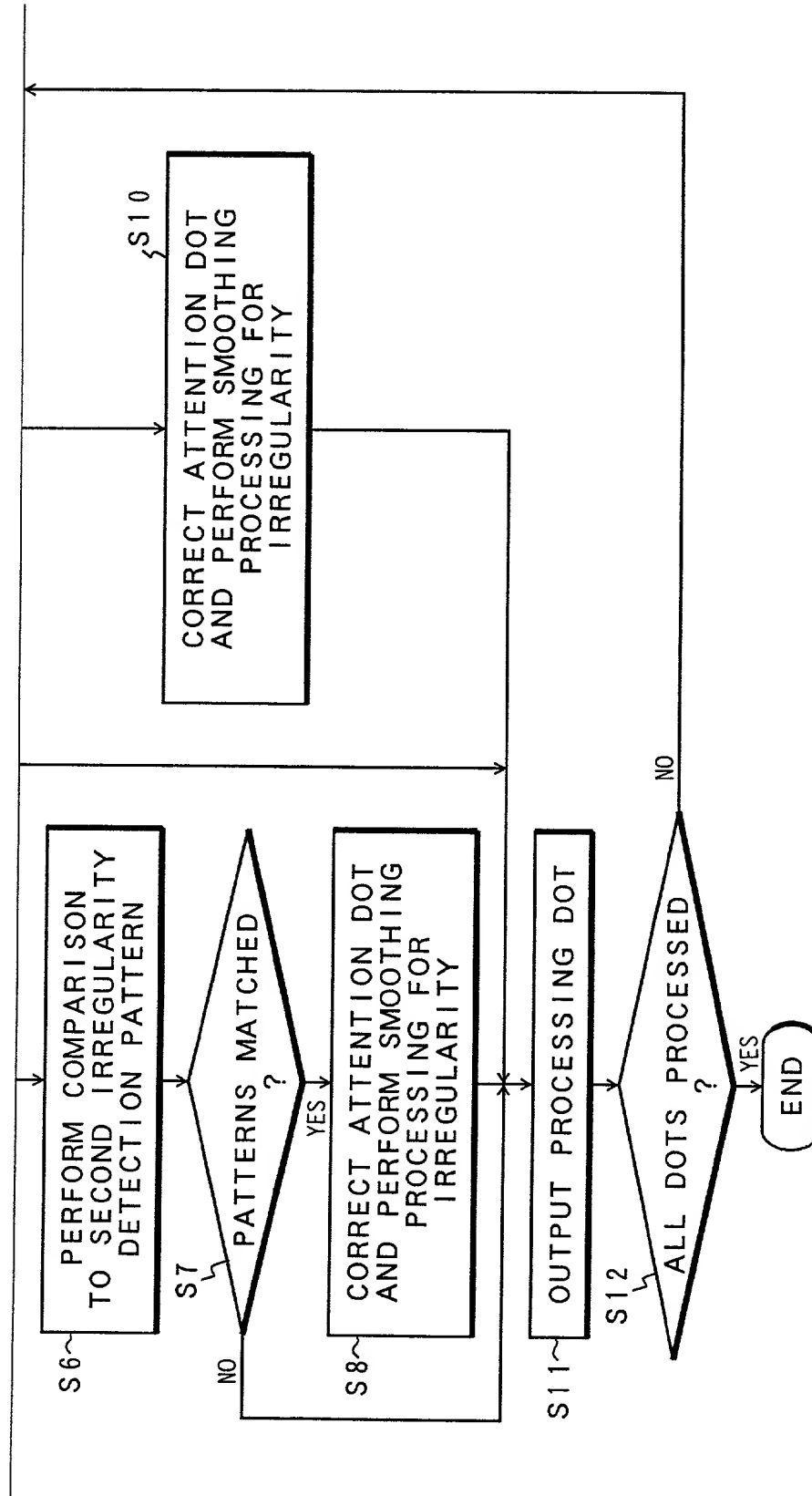


FIG. 59

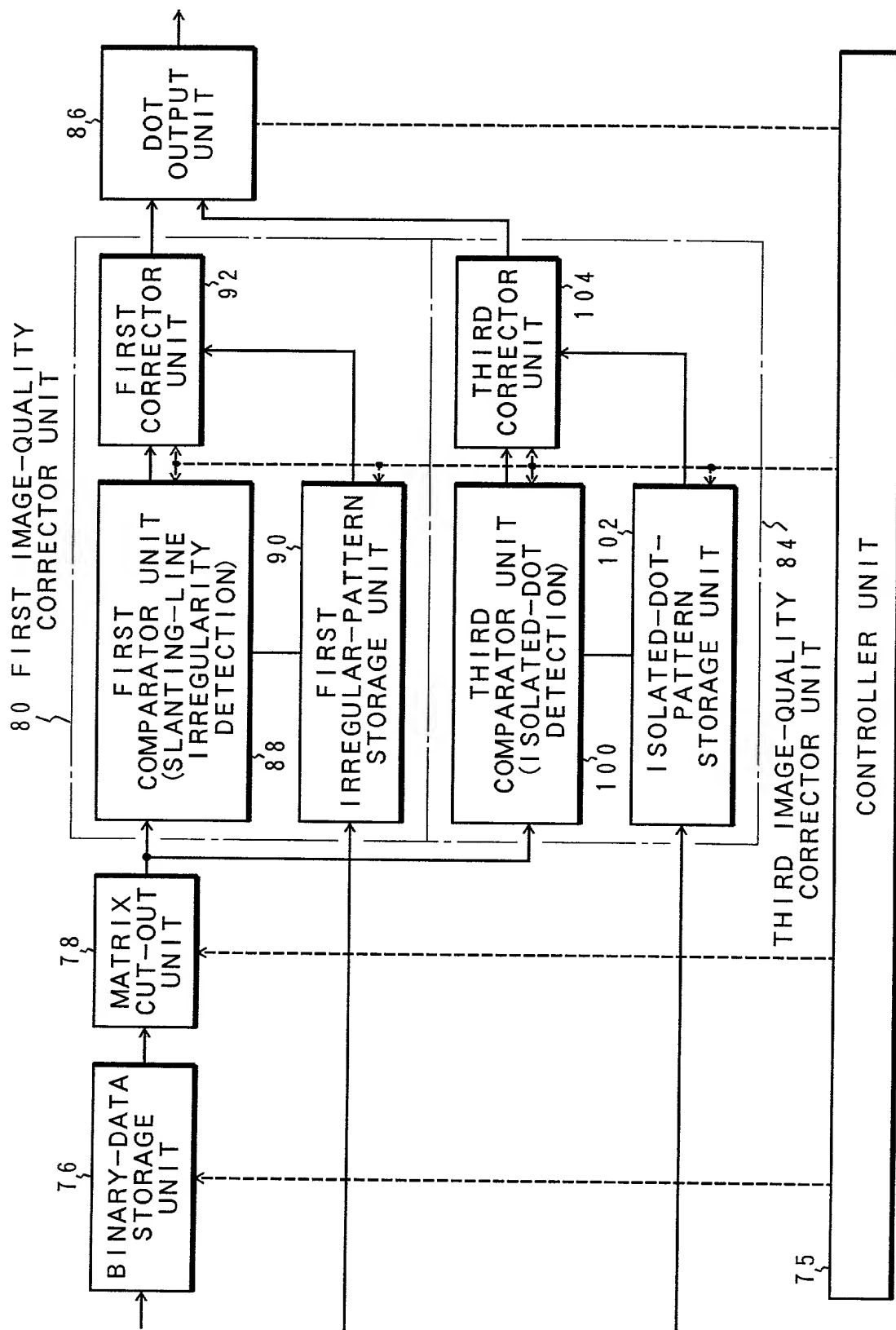


FIG. 60A

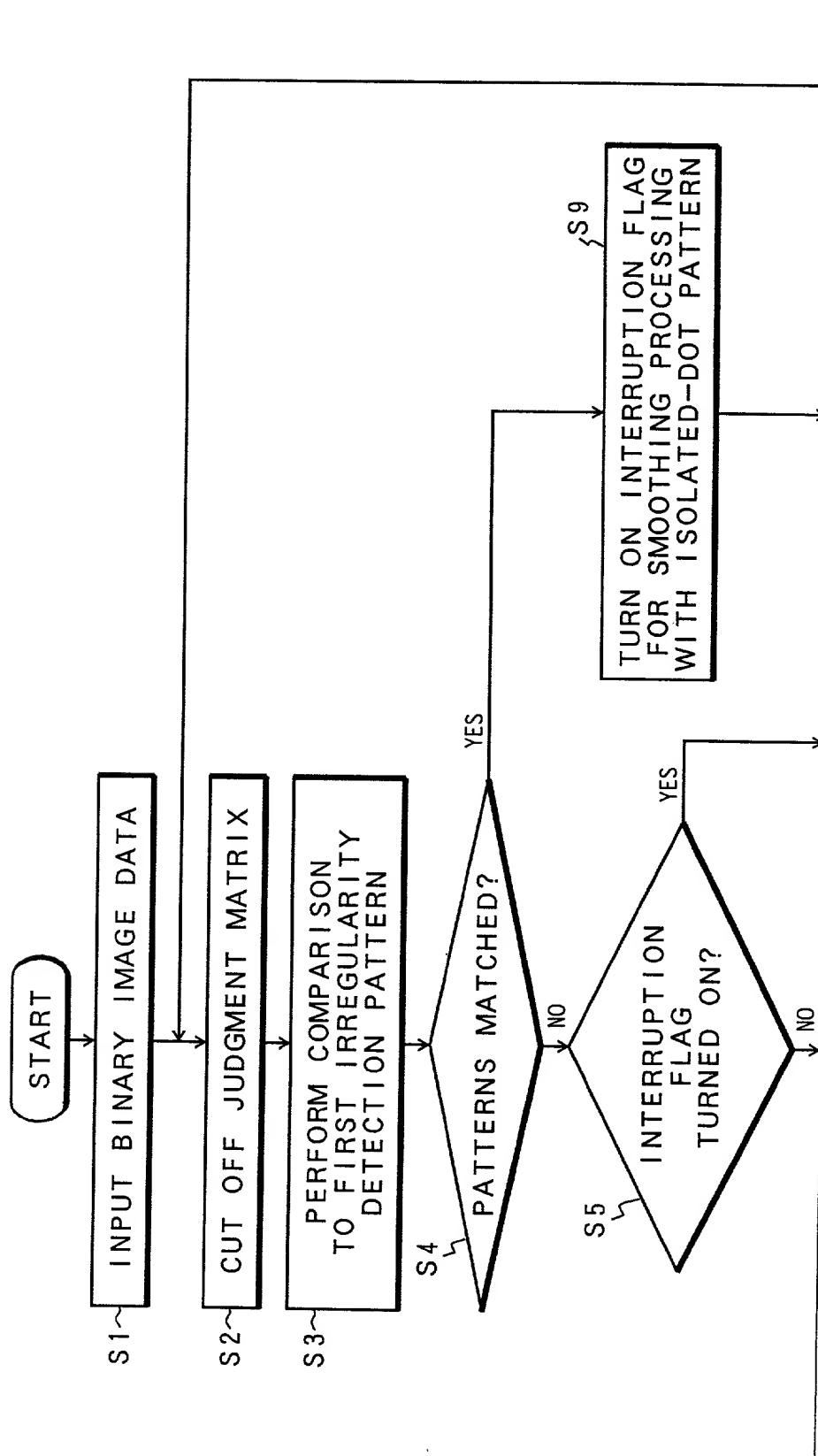


FIG. 60B

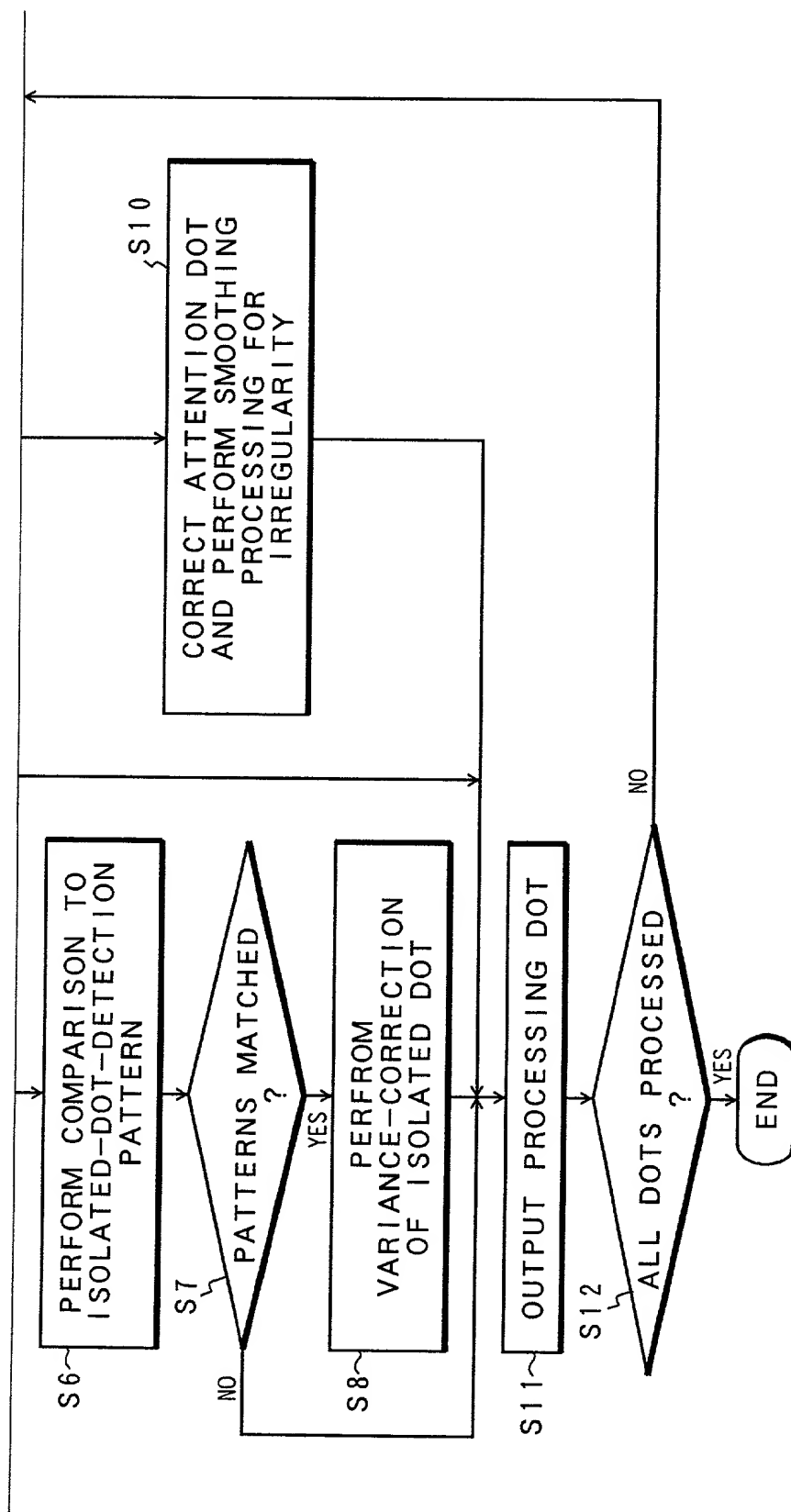




FIG. 61

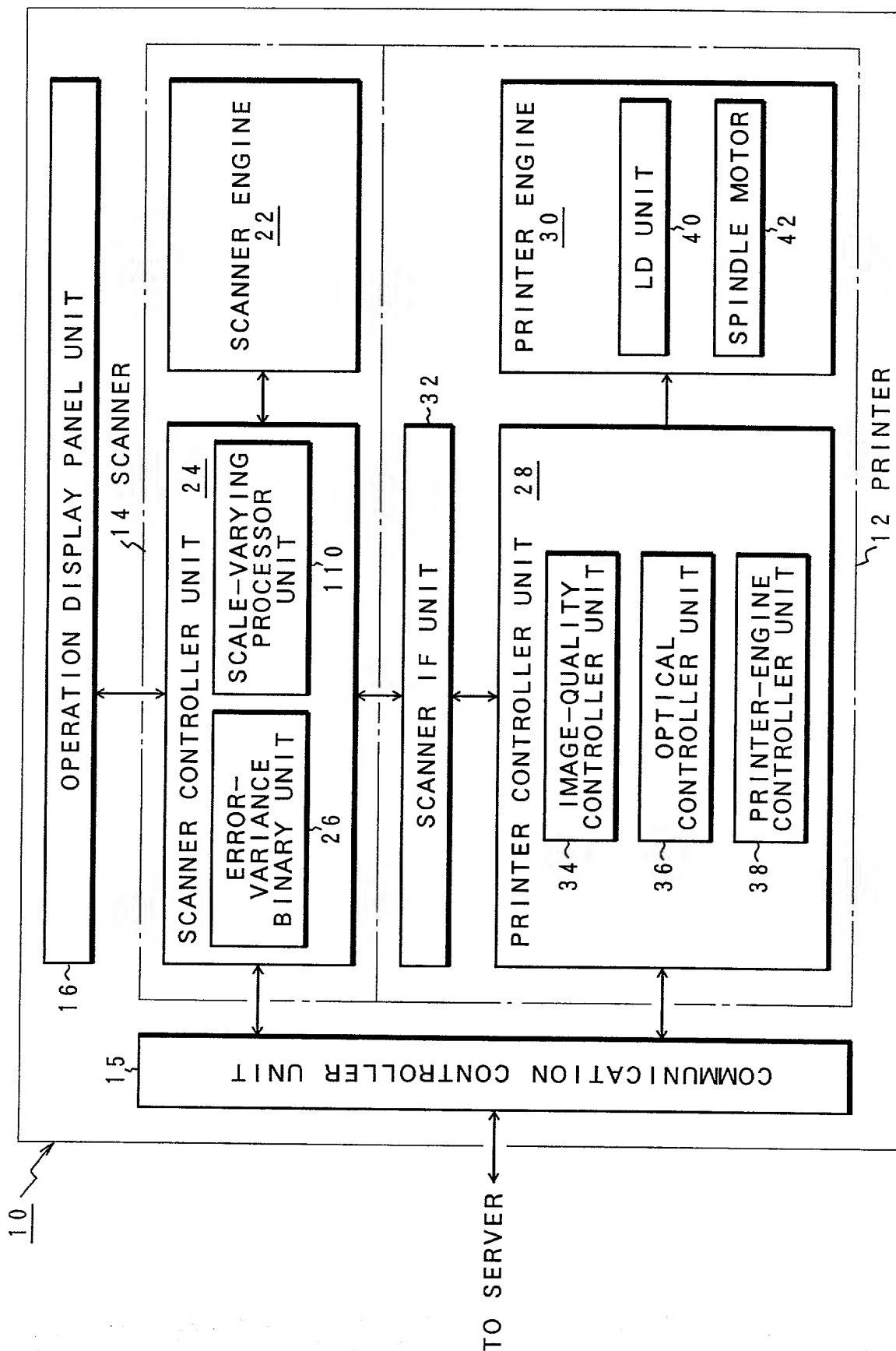


FIG. 62

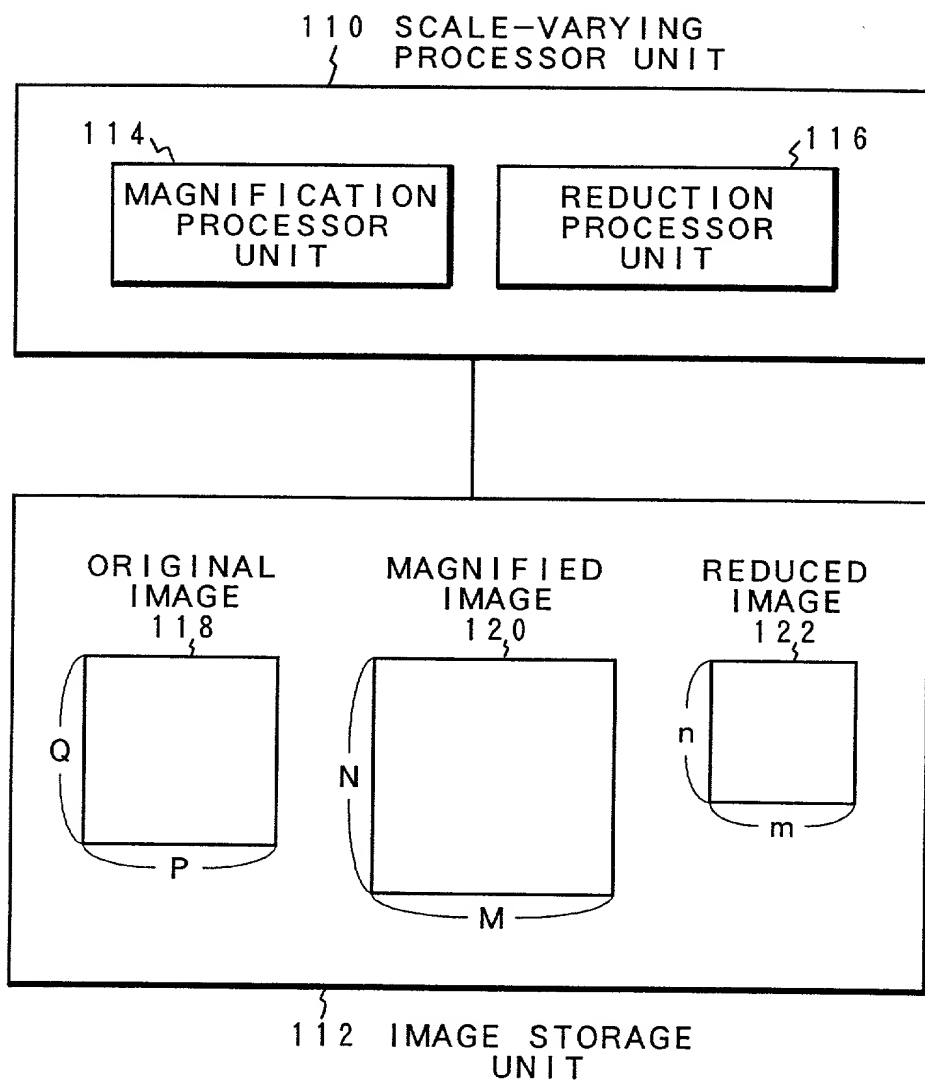


FIG. 63

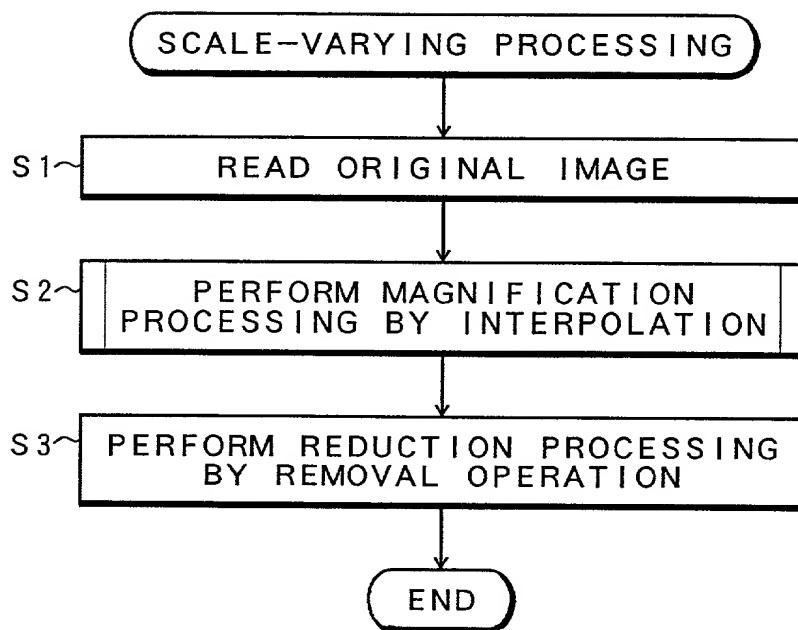


FIG. 64A

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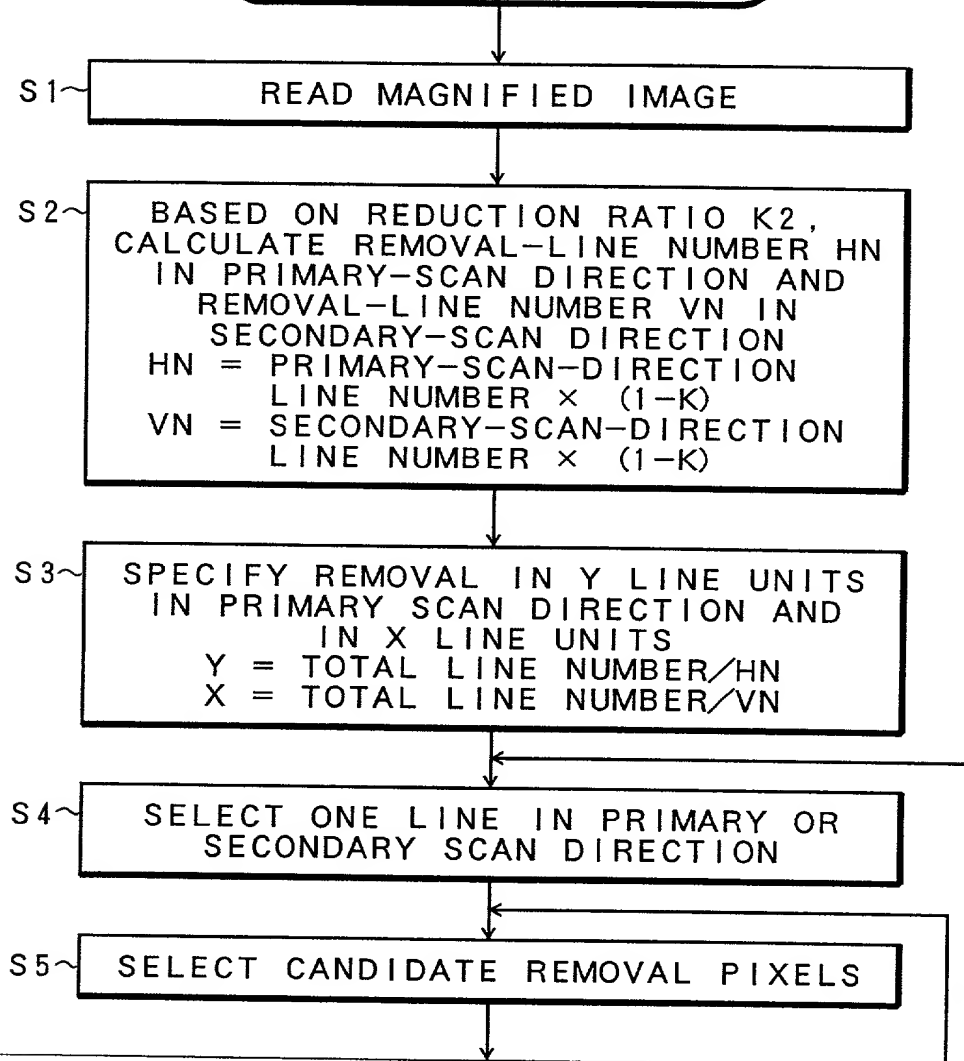
A	B	C
D	E	F
G	H	I

FIG. 64B

120

A	$(A+B) / 2$	B	$(B+C) / 2$	C	C
$(A+B) / 2$	$(A+B+C+D) / 4$	$(B+C) / 2$	$(C+D+E+F) / 4$	$(C+F) / 2$	$(C+F) / 2$
D	$(D+E) / 2$	E	$(E+F) / 2$	F	F
$(D+G) / 2$	$(D+E+G+H) / 4$	$(E+H) / 2$	$(E+F+H+I) / 4$	$(F+I) / 2$	$(F+I) / 2$
G	$(G+H) / 2$	H	$(H+I) / 2$	I	I

REDUCTION  
PROCESSING BY REMOVAL  
OPERATION



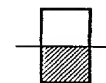


FIG. 65B

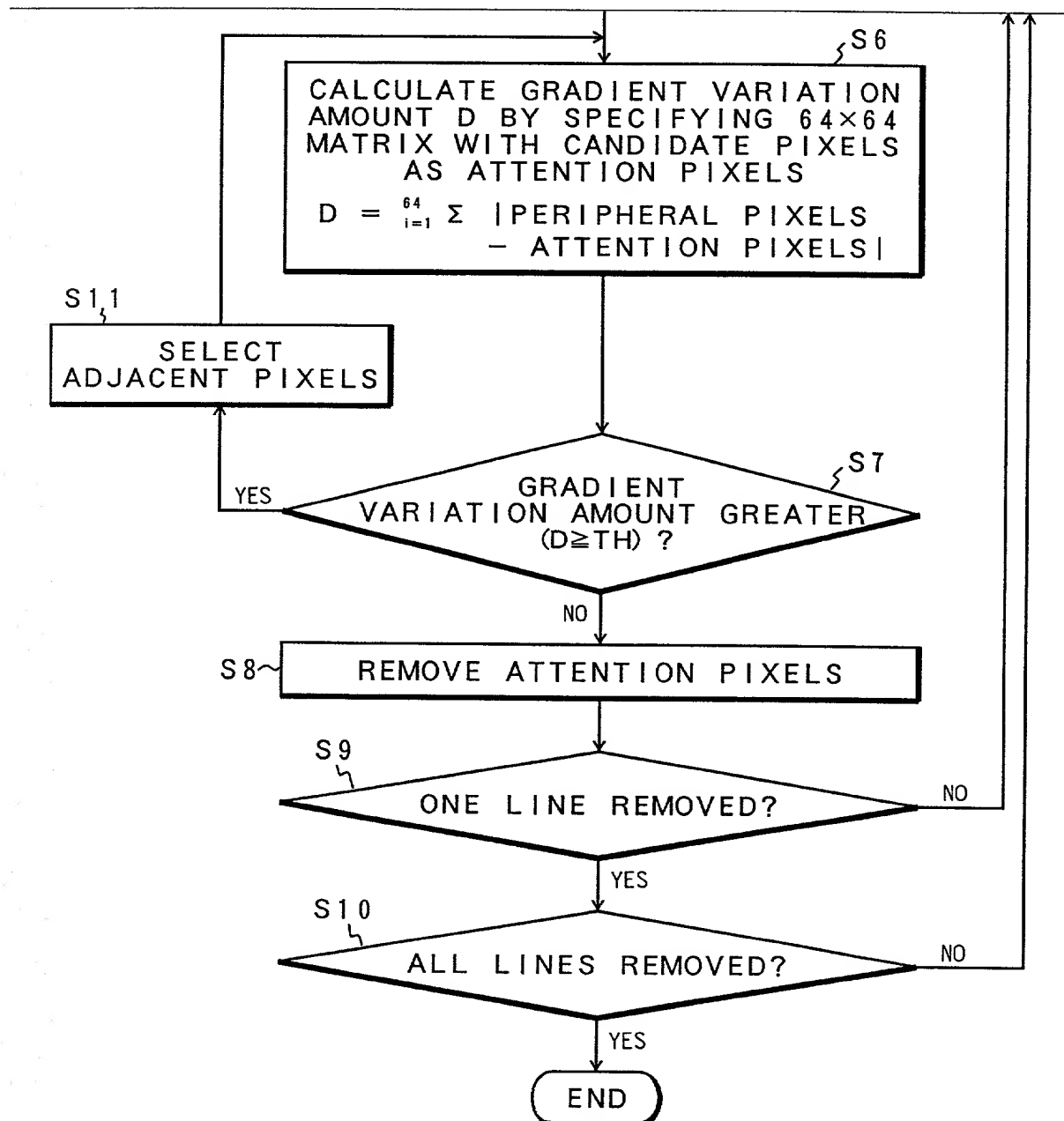


FIG. 66

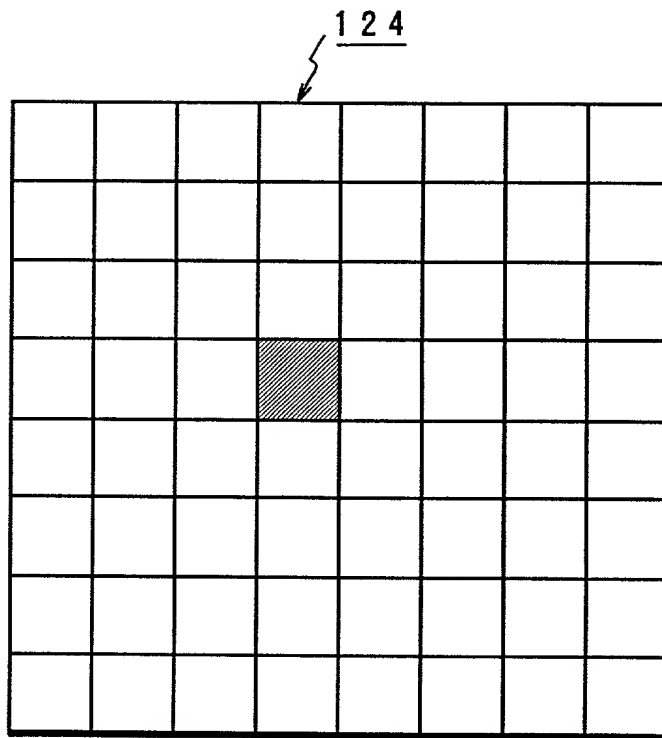


FIG. 67A

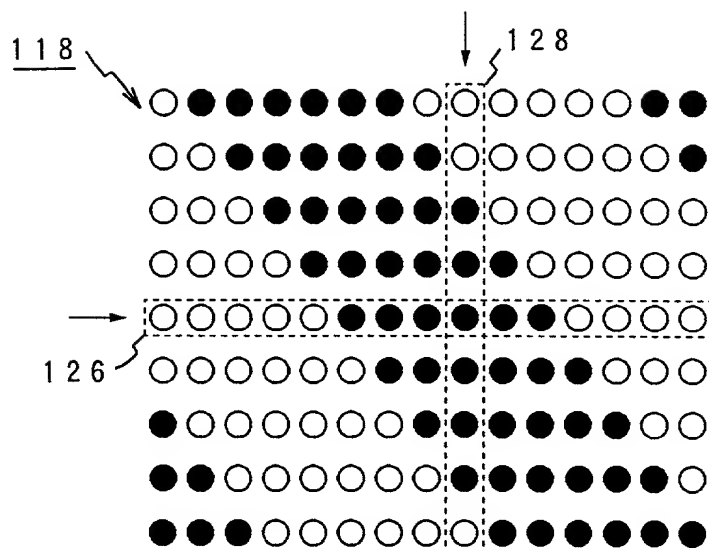


FIG. 67B

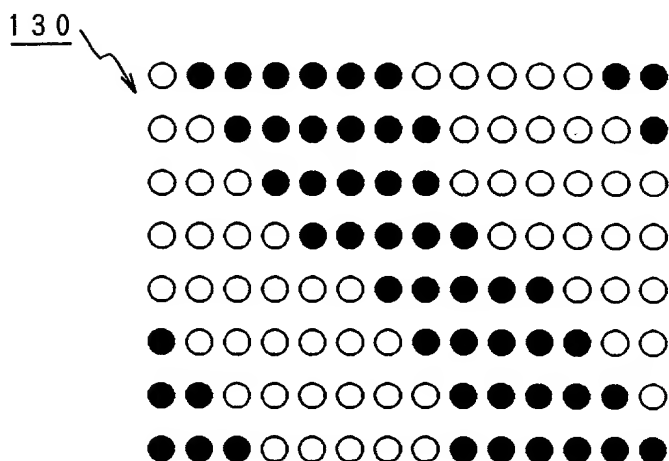


FIG. 67C

